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ABSTRACT

The Program Evaluation Survey (PES) was developed to measure student perceptions of and satisfaction with the instructional, curricular, advising, and operational phases of an academic department. The monograph is a report of a series of studies conducted to determine the validity and usefulness of the PES designed to provide both formative evaluation information to departmental faculty and summative information to campus committees and administration. This 24-item survey, developed for use in a cyclical departmental review process, has been administered to over 7,000 undergraduate and 3,000 graduate majors in 48 academic departments at the University of Illinois, Urbana-Champaign. Hierarchical factor analysis indicates that the items measure student satisfaction with four specific dimensions (value of major, satisfaction with instruction, mentorship, and curricular offerings) and a general dimension (overall satisfaction). Scales associated with the four specific factors are invariant across undergraduates and graduates and are also able to discriminate among departments and identify possible strengths and weaknesses in a department. The correlations between the PES scales and 17 faculty characteristics indicate that student satisfaction was most highly related with faculty membership in college committees. The PES seems to be measuring dimensions of the department that reflect the supportive and facilitative role of the departmental faculty and the challenging role of the department through its faculty, standards, and requirements. (Author/JMF)

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# THE DEVELOPMENT AND USE OF THE PROGRAM EVALUATION SURVEY (PES)

Office of Instructional Resources

University of Illinois - Urbana-Champaign

Urbana, Illinois 61801

August, 1977

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# THE DEVELOPMENT AND USE OF THE PROGRAM EVALUATION SURVEY (PES): A measure of student majors' perceptions of and satisfaction with their academic department.

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Chapter 1

OVERVIEW

The purpose of this report is to present a descriptive summary of the development, analysis, and use of an instrument called the Program Evaluation Survey (PES). The PES was developed to measure student perceptions of and satisfaction with the instructional, curricular, advising, and operational phases of an academic department. It was developed as part of a comprehensive evaluation program initiated by the University of Illinois, Urbana-Champaign (UIUC) in 1973 to better understand and determine the quality of academic units (departments or other organizational units).

The report describes the development of the PES, its intended functions, revisions, validity, reliability and usefulness. A brief summary of the role and function of the Council on Program Evaluation (COPE), a committee of faculty and students chaired by Associate Vice Chancellor for Academic Affairs charged with the responsibility of designing and implementing a faculty-based evaluation, is presented to provide the context for the development of the PES.

The summary presented in this chapter is an overview of the development and purpose of the PES, a description of the instrument, its validity, and its potential use on a college or university campus. The subsequent chapters contain a detailed description of the development and validation of the PES.

## Context of PES

At the University of Illinois the academic department is a very important organizational unit. Departmental quality and excellence has been promoted in the university community. In the early 1970's, UIUC

initiated a major effort to evaluate all academic programs on a cyclical schedule. Two major committees recommended that a comprehensive evaluation of departments be established which would focus on program excellence.

In 1973 the Council on Program Evaluation (COPE), which consists of faculty and students chaired by an Associate Vice Chancellor, was given the responsibility of establishing and implementing an in-depth evaluation program. The program was to be faculty-based and largely a self-evaluative effort. COPE based the greater part of its evaluation plan on the principle that an evaluation should avoid the use of uniform campus-wide prescriptive measures of quality and to rely primarily on the criteria and standards of excellence inherent in each discipline as the basis of judgment. However, a few cross-departmental measures were used or developed. The PES was one of them.

An early and ongoing task of COPE was to develop a system of collecting and reporting evaluative information. Because of COPE's sensitivity to departmental differences, COPE has emphasized that the information reflect the unique and distinguishing features and characteristics of departments. They also advocated that the assessment of quality must include a consideration of several criteria; a single indicator would oversimplify the strengths and contributions of a department. Given these considerations the Council developed a list of departmental characteristics and program dimensions and the sources from which the data could be obtained. Data from faculty, administration, and students obtained from personnel records and questionnaires were included in the evaluation plan.[1]

---

[1]More information about COPE and the departmental review process used at UIUC can be obtained from the Office of the Vice Chancellor for Academic Affairs.

COPE asked the staff of the Office of Instructional Resources (OIR) to assist in developing, implementing, and interpreting objective measures for use by students that would be consistent with COPE's principles. OIR has taken the responsibility of developing the PES and determining its validity and assessing its usefulness.

Purpose of PES

The purpose of the PES instrument was to assess students' perceptions of the instructional and curricular phases of a department. Students would be asked both to report and to judge, from their perspective, the quality of several dimensions of a department and their satisfaction with them. Thus, the information from the students would be considered evaluative as well as descriptive.

The information obtained by the students from the PES was to serve two functions:

(a) University-level administrators and COPE could use the information in making comparative judgments about many educational units.

(b) Faculty and department level administrators could use the information in identifying relative strengths and weaknesses within each department, so that program improvements could be implemented if needed.

In the construction of the initial pool of items, an Item Committee, appointed by COPE, used the following guidelines: (1) The information asked of students majoring in the program would be information that they could appropriately provide; (2) One instrument would be administered to all students, regardless of undergraduate and graduate status or academic department affiliation; (3) Students would need to complete the instrument in less than 15 minutes; (4) The results would be presented in a for-

mat that would easily be understood by faculty and administrators not familiar with measurement terminology and symbolism.

Description of PES

Three forms of the PES have been administered to 53 academic departments since 1974. The original form of 41 scale items was developed and used in 1974 to evaluate five academic departments. A revised form of 33 items and four open-ended questions was administered to 3,148 undergraduates and 1,336 graduate students in 22 departments in 1975. Minor revisions were made in this form and the current version of 24 bipolar adjective items and the same four open-ended questions was administered to 4,213 undergraduates and 1,824 graduates in 1976. In each instance revisions were based mainly on two criteria: a) item statistics such as low reliability or lack of discrimination; and b) comments from users. In all three years, only majors in a given department completed the form. Departments assumed the responsibility of administering the instrument individually to their majors as they registered for Spring semester classes in the Advance Enrollment Period, a week in early November.

The current version of PES contains six biographical items (sex, class level, cumulative G.P.A., transfer status, graduation status and reason for choosing a major). On the remaining 24 items, which include a five-point bipolar response format, students indicate the level of difficulty and structure of their major program, admission standards, their attitude toward major program, and satisfaction with 18 programmatic areas of their department (e.g., well-integrated set of courses, academic contact with faculty, quality of vocational guidance, value of program). A copy of the 1976 instrument is found on the following page and in Appendix A.

SIDE ONE

## PROGRAM EVALUATION SURVEY

**SECTION I**

| SPECIAL CODE A B C D E | SEX | NUMBER OF COMPLETE SEMESTERS ON CAMPUS IN CURRENT MAJOR |
|---|---|---|
| 0 0 0 0 0 | Male ○ | 0 - 1 ○ |
| 1 1 1 1 1 | Female ○ | 2 - 3 ○ |
| 2 2 2 2 2 | STATUS | 4 - 5 ○ |
| 3 3 3 3 3 | Fresh ○ | 6 Plus ○ |
| 4 4 4 4 4 | Soph ○ | CUMULATIVE GPA |
| 5 5 5 5 5 | Junior ○ | 4.71 or Above ○ |
| 6 6 6 6 6 | Senior ○ | 4.21 - 4.7 ○ |
| 7 7 7 7 7 | Masters ○ | 3.71 - 4.2 ○ |
| 8 8 8 8 8 | Doctoral ○ | 3.7 or Below ○ |
| 9 9 9 9 9 | Other ○ | |
| OFFICE USE ONLY 0 1 2 3 4 | | |

**GENERAL DIRECTIONS:** This "Program Evaluation Survey" was designed to elicit your opinions about the program of studies you are currently pursuing (i.e., your major). When you are answering the items please consider your reaction toward your major and your department as a whole and not specifically toward any one course or instructor. This survey is one facet of an overall departmental evaluation.

**USE PENCIL ONLY!**

**GRADS ONLY**

FROM WHERE DID YOU OBTAIN YOUR UNDERGRADUATE DEGREE?

- My present department ..... ○
- Another department on this campus ..... ○
- Same or similar dept. on another campus ..... ○
- A different dept. on another campus ..... ○

**UNDERGRADS ONLY**

A. TRANSFER STATUS

- ○ Not a transfer student
- ○ Transfer from a four-year institution
- ○ Transfer from a community college

B. PRIMARY REASON FOR CHOOSING MAJOR

- ○ Preparation for grad or professional school
- ○ Preparation for immediate entry into a vocation
- ○ Neither, but was interested in subject
- ○ Other

**SECTION II**

**DIRECTIONS:** For each of the items below indicate your opinion of your major or your department by marking the point on the scale which most nearly expresses your opinion. The middle point on the scale indicates an opinion of "About Right".

| | | | |
|---|---|---|---|
| 1. The level of difficulty of your major program. | TOO EASY | ABOUT RIGHT ○○○○○ | TOO DIFFICULT |
| 2. The amount of structure in your academic program (curriculum). | TOO FLEXIBLE | ○○○○○ | TOO RIGID |
| 3. The departmental admissions standards. | TOO HIGH | ○○○○○ | TOO LOW |
| 4. The orientation of the majority of your course work. | TOO GENERAL | ○○○○○ | TOO DETAILED |
| 5. Indicate your perception of the balance between departmental attention to undergraduate and graduate programs. | UNDER-GRADUATE EMPHASIS | ○○○○○ | GRADUATE EMPHASIS |
| 6. Some students are more absorbed in, and enthusiastic about their majors than others. Describe your attitude toward your major program. | INDIF-FERENCE | ○○○○○ | DEDICA-TION |

(DO NOT CONSIDER "ABOUT RIGHT" POSITION WHEN ANSWERING THIS QUESTION)

**SECTION III**

**DIRECTIONS:** For the following items, rate your level of satisfaction with your major or your department by marking one point which most nearly expresses your attitude. (NA indicates Not Applicable and DK indicates Don't Know)

| | SATISFACTION | |
|---|---|---|
| 7. The extent to which you are challenged by your program of study. | LOW ○○○○○ | HIGH |
| 8. The extent to which your major program provides a well-integrated set of courses. | LOW ○○○○○ | HIGH |

CONTINUE SECTION III IN NEXT COLUMN

**SECTION III (Continued)**

| | SATISFACTION | |
|---|---|---|
| 9. The overall quality of instruction in your major department. | LOW ○○○○○ | HIGH |
| 10. The extent to which a sound theoretical framework is developed in your major program | LOW ○○○○○ | HIGH |
| 11. On the average, the quality of texts and other instructional materials used by instructors in your department. | LOW ○○○○○ | HIGH |
| 12. Classroom evaluation procedures (graded tests, papers ·) | LOW ○○○○○ | HIGH |
| 13. The availability of enrichment activities offered in addition to regular classes. (Seminars, colloquia, social events, etc.) | LOW ○○○○○ | HIGH |
| 14. The variety of course offerings | LOW ○○○○○ | HIGH |
| 15. Departmental attention to providing students with credentials for obtaining employment after graduation. | LOW ○○○○○ | HIGH (NA) |
| 16. Academic contact with faculty outside the classroom. | LOW ○○○○○ | HIGH |
| 17. The quality of academic advising. | LOW ○○○○○ | HIGH |
| 18. The quality of vocational guidance. | LOW ○○○○○ | HIGH |
| 19. The channels of communications between faculty and students regarding student needs, concerns and suggestions. | LOW ○○○○○ | HIGH |
| 20. The departmental support staff (secretarial, clerical, etc.) who deal directly with students. | LOW ○○○○○ | HIGH |
| 21. Size of lower level (100 - 200) classes. | LOW ○○○○○ | HIGH (DK) |
| 22. Size of upper level (300 - 400) classes. | LOW ○○○○○ | HIGH (DK) |
| 23. The extent to which you regard your program of study as worthwhile. | LOW ○○○○○ | HIGH |
| 24. Overall satisfaction with your major program. | LOW ○○○○○ | HIGH |

-5-

PLEASE CONTINUE ON REVERSE SIDE

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SIDE 2

**SECTION V PLEASE COMPLETE THE FOLLOWING OPEN-ENDED QUESTIONS**
**PLEASE KEEP RESPONSES WITHIN THE BOXES PROVIDED**

1. What are the major strengths of your major department?

2. What are the major weaknesses?

3. How has the department failed to meet the expectations which you had when you entered?

4. What changes, if any, would you suggest in courses and/or curriculum?

**SECTION IV**
**OPTIONAL ITEMS**

**PLEASE RESPOND TO OPTIONAL ITEMS IN THE SPACE BELOW IF SUCH ITEMS ARE USED.**

| | | | |
|---|---|---|---|
| 1 | A B C D E | 22 | A B C D E |
| 2 | A B C D E | 23 | A B C D E |
| 3 | A B C D E | 24 | A B C D E |
| 4 | A B C D E | 25 | A B C D E |
| 5 | A B C D E | 26 | A B C D E |
| 6 | A B C D E | 27 | A B C D E |
| 7 | A B C D E | 28 | A B C D E |
| 8 | A B C D E | 29 | A B C D E |
| 9 | A B C D E | 30 | A B C D E |
| 10 | A B C D E | 31 | A B C D E |
| 11 | A B C D E | 32 | A B C D E |
| 12 | A B C D E | | |
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| 19 | A B C D E | | |
| 20 | A B C D E | | |
| 21 | A B C D E | | |

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**DO NOT WRITE IN SHADED AREA**

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## The Use of PES in a Departmental Review Process

The usefulness of the PES as a measure of student perceptions can only be evaluated within the content of the entire departmental review process as implemented at UIUC. As such its acceptance and utility cannot totally be separated from the reactions and opinions toward COPE of the UIUC academic community. Nevertheless in this section we will present some opinions and reflections of the potential use of evaluative information obtained from students in determining departmental quality, based on our survey results of the 44 UIUC departmental heads or representatives.

Why is collecting information from students beneficial? If the purposes of a review process are both formative and summative then a comprehensive evaluation in which information collected from a variety of sources is desirable. For formative evaluation the departmental staff can use information about its current operation so that programmatic changes can be initiated if desired. In summative evaluation, the administrators need information for general policy decisions, resource allocations, and for rewarding, supporting and terminating programs.

If student satisfaction, achievement, and judgments of the departmental faculty, environment, and management are used as a part of the information base, can it appropriately be used for both formative and summative evaluation? Perhaps its greatest contribution is in providing information about the interpersonal, professional, and academic environment of a department. Through their daily contact with faculty over an extended length of time, students can provide information about the degree of encouragement and support they receive and the degree to which they consider their major or studies to be worthwhile. They are in a position to describe and to evaluate their experiences as students. This type of

information appears most beneficial to those most closely involved with the program operation, in this case the departmental staff.

Although the purpose of the PES was to provide information to both central administrators to assist them in making comparative judgments about departments, and to faculty for identifying program strengths and weaknesses, the best evidence available for using the PES would seem to rest on its potential use in formative evaluation. Based on the survey of departmental heads or representatives, there was considerable formative use of the PES results. Nearly all of the departments either presented the results at faculty meetings, had select committees review the results, or made the reports available to faculty and students.

What did the departmental staff learn from this feedback? Two of every three indicated that the students perceptions had verified or documented their personal perceptions of student opinion, and only a few were somewhat surprised by the extent of student dissatisfaction. Departments took a variety of actions based on the feedback. Meetings were held with students to improve communication, committees on program evaluation were established, revisions of the curriculum incorporated student opinions, and improvement of academic advising are some of the changes resulting from the student feedback.

Finally the distinction between formative and summative evaluation becomes not all that discrete when information is used by a variety of people in a continuous review process. The departmental staff found the interdepartmental comparisons to assist them in better understanding their own strengths and weaknesses. Comparative judgments could not and probably should not be avoided regardless of the uses of the data and the intended use of the information.

## Validity of PES

Several analyses were run on the data obtained in both the 1975 and 1976 administrations of the PES to determine if the PES instrument could be used to fulfill the two functions for which it was intended. Three types of validity--structural, discriminant, and criterion related--are used to organize the results of the validity studies.

Structural Validity. The structural validation of the PES pertains to the identification of stable and interpretable areas of student satisfaction with the instructional and academic environment provided in the major's academic department. Do the same interpretable factors account for the responses of both undergraduates and graduates; i.e., is the same factor structure stable for various groups? On the basis of the hierarchical factor analyses performed on both the 1975 and 1976 data, the answers to the preceding questions are affirmative.

The 1976 PES instrument measures four dimensions of student satisfaction with the academic department. The same four first order factors, which are internally consistent and reasonably independent, were obtained from the responses of both undergraduates and graduates.

The first factor, Satisfaction with Mentorship, relates to faculty-student relationships. The four items measure students' satisfaction with the academic contact with faculty in and outside the classroom, faculty-student communication, quality of academic advising, and quality of vocational guidance. (Items 16, 17, 18, and 19).

The second factor, Personal Value, relates to the effort and interest the student has in the department. The three items measure student dedication to major program, worthwhileness of the major program, and overall satisfaction with the major program. (Items 6, 23, and 24).

The third factor, Satisfaction with Instruction, represents the students' assessment of the quality of instruction received in the major department. The four items measure student satisfaction with texts, classroom evaluation procedures, major program having a sound theoretical framework, and quality of instruction. (Items 9, 10, 11, and 12).

The fourth factor, Satisfaction with Curricular Offerings, relates to the learning environment and opportunities supported by the department. The three items measure the availability of enrichment activities, integration of courses, and variety of course offerings. (Items 8, 13, and 14).

A second order factor labeled Overall Satisfaction with the Academic Department was also obtained. Most of the PES items also reflect a pervasive departmental impression or reputation that influences the students' satisfaction with the various areas of their major program of study. This general factor may thus be representing a "halo effect."

Based on another factor analysis of the 1976 PES items and an additional set of 22 bipolar adjectives administered to majors in five departments, student satisfaction as measured by the PES appears to be dependent upon the extent of (a) departmental support and facilitation of personal and intellectual development and (b) departmental challenge. Items loading on "Satisfaction with Mentorship" reflect the supportive function of the department, while the items of the other factors reflect both support and challenge.

Scales consisting of the items with high loadings on each of the four specific factors were constructed. Coefficient alphas for each scale were generally quite high (above .70), and the intercorrelations among the scales were considerably lower (around .50). Each of the four scales of

the PES are considered to measure a specific area of student satisfaction with an academic program and are interpretable for both undergraduates and graduates.

Discriminant Validity. Since the PES was to provide information upon which comparative judgments among departments and identification of weaknesses and strengths within a department can be made, analyses were conducted to assess the discriminant validity of the PES. Discriminant validity for between-department comparisons refers to the ability of the PES scales to distinguish departments on the basis of the students' responses to the items in each scale. The analyses involved the calculation of Horst reliabilities of departmental means on the 1975 PES scales (the three scales extracted in the factor analyses based on 1975 data were similar to the first three obtained from the 1976 data), which were then used to determine 95% confidence intervals of each departmental mean for each scale. These confidence intervals were then placed on a reference distribution of the scale scores of all undergraduates and graduates regardless of departmental affiliation. Based on the degree of overlap among the confidence intervals, the PES scales, particularly the scale "Satisfaction with Mentorship," were shown to possess reasonable discriminatory power for making interdepartmental comparisons. The PES is a better discriminator among undergraduate programs than graduate programs, however, partly due to the effect department size has on the reliability coefficients. Thus the PES may be most useful for evaluating large departments.

The validity of the PES for identifying within-departmental weaknesses and strengths was also investigated. Do students in a department respond differently to the PES scales so that the instrument demonstrates sufficient

diagnostic value? Based on the overlap of 95% confidence intervals for the three scale means for each department, no overlap occurred between at least two of the three PES scales in nine of the 42 departmental programs (20 undergraduate and 22 graduate) reviewed in 1975. If a less stringent criterion such as a 68% confidence interval were used, many more nonoverlapping intervals would occur. These findings provide some support for the diagnostic quality of the PES, even though the overall satisfaction or rating halo factor partially limits the power of the PES as a diagnostic tool.

Criterion-related validity. The criterion related validity of the PES was investigated to determine if student satisfaction with different areas of a department are related to other department characteristics regarded as important criteria for judging quality. Is student satisfaction related to characteristics of the faculty and department?

Based on the correlations between the four 1976 PES scales and 24 characteristics of faculty, student satisfaction is uncorrelated with the average number of scholarly publications, but student satisfaction with mentorship is related to number of "other" publications. Both undergraduate and graduate satisfaction, especially with mentorship and with instruction, are positively related to membership on college committees but negatively related to membership on university committees.

However, undergraduate and graduate satisfaction is not consistently related to other faculty characteristics. Undergraduates tend to be relatively less satisfied with departments whose faculty are older and have a greater proportion of full professors whereas graduate students are more satisfied with their faculty when the department includes a relatively large number of senior faculty. Faculty estimates of their

departmental morale is not related to graduate student satisfaction but slightly negatively related to undergraduate satisfaction.

In sum, students, especially the undergraduates, seem to base their satisfaction with their major department on the supportive and interpersonal relationships available to them within their academic department. Faculty morale and research productivity are independent of the extent of student satisfaction with the areas of the department as measured by the PES.

Chapter 2

DEVELOPMENT OF PROGRAM EVALUATION SURVEY

## Council on Program Evaluation and the COPE Report

The PES evolved from efforts by the Council on Program Evaluation (COPE) to develop a set of procedures for a cyclical evaluation of all academic programs. In 1973 the Vice Chancellor for Academic Affairs established the committee consisting of thirteen members: nine faculty including five without administrative appointment, two undergraduate students, and two graduate students. The Council was charged with conducting in-depth evaluations of academic departments and administrative programs on the Urbana-Champaign campus.

Information for the self-evaluation is provided by students, faculty, and departmental administrators. The staff of the Office of Instructional Resources (OIR) was asked to assist in developing an instrument to collect information about students' perceptions about the quality of their academic programs. Faculty are asked to evaluate the performance of their department head on a form developed at Kansas State University, and modified slightly for use on the UIUC campus (Hoyt, 1976). Faculty also indicate perceptions of campus, departmental, or personal morale, operation of departmental procedures, and the effect of administrators outside the department on departmental operations.

Of central importance to the self-evaluation is a narrative report prepared by faculty and administrators in the department following guidelines provided by COPE. The units respond to an extensive set of questions exploring their view of the discipline nationally; the specifics of departmental organization including its operating procedures and structures

and its methods for handling curriculum problems; the record of faculty research and scholarship, service and continuing education activities; and an appraisal of present problems facing the department, regardless of their nature. Data concerning tenure, promotion, courses taught and budget are supplied for the report by central sources on campus when available, as well as by the department itself. The resulting report is a mixture of collegial impressions and judgments, student majors' perceptions of programmatic aspects of departmental operation, demographic and financial data, and extensive detailed description. This confidential report is considered to be raw data for use by the Council, which makes recommendations to the Vice Chancellor for Academic Affairs. In some special instances, a subcommittee consisting of faculty from the department and from other departments conductes even more detailed studies.

The PES Instrument

The Council and OIR staff decided that an instrument to measure various dimensions of the instructional program of a department should be designed to accomplish two functions:

1. College and university administrators and COPE could use the information in making comparative judgments about academic departments. Those responsible for making summative evaluations of the quality of a department could use student perceptions as one criteria.
2. Faculty and department-level administrators could use the information to identify relative strengths and weaknesses within each department. The use would primarily be formative, i.e., to use this information as a basis for making potential program changes.

The 1974 Instrument. During the 1973-74 academic year, COPE appointed an Item Committee to develop an instrument. Five guidelines were used:

1. The instrument should measure five dimensions for which student input is important and appropriate:
    a. program integration
    b. guidance and advising
    c. instruction and testing
    d. general satisfaction and worth
    e. use of resources
2. The instrument should be written so that all student majors, regardless of their academic department affiliation or graduate or undergraduate status, could answer the questions.
3. Students should be able to complete the instrument in less than 15 minutes.
4. Students should be asked not to rate any individual faculty or staff member (advisor, department chairperson) but to focus on the faculty as a single aggregate.
5. The information obtained from the students should be summarized and presented in such a manner that faculty and staff not familiar with measurement terminology and symbolism could easily interpret the information.

The items were administered to students in five classes in a pilot test and revisions were based on students' responses and evaluations of each item. Subsequently, a list of 41 items with bipolar response alternatives was selected and administered to majors in five departments who were in the COPE review in the fall of 1974.

The 1975 Instrument. The Item Committee used the results of the 1974 PES administration to make further revisions. The 1975 instrument, which was placed on a machine scannable answer sheet, contained five sections: (1) seven demographic items; (2) ten items to which students expressed opinions about the level of difficulty, amount of structure, variety of course offerings, admission standards, degree of emphasis placed on professional training, and graduate education; (3) fourteen items rating students' satisfaction with dimensions of curricula offerings, advising, and faculty-student relationships; (4) eight items asking students to indicate which areas should receive top priority if additional funds were available to the department; (5) a section allowing for 24 additional optional items of the department's choice; and (6) four open-ended questions. A copy is included in Appendix B. This instrument was given to 1,336 graduate students and 3,418 undergraduates in 22 departments, 20 of which had undergraduate programs. Table 2.1 lists the number and percent of majors in each department completing the PES. The median proportion of the total enrolled students completing this form was .70 for undergraduates and .68 for graduates.

Three major questions were considered in the interpretion of the items to the departments and in the revision of the items.

1. How variable are students' responses to each item? The proportion of students indicating the five alternative responses to each item were calculated separately for graduates and undergraduates, combined across all departments. This analysis, presented in Table 2.2, shows that undergraduates and graduates had similar response patterns. Responses to items 1-6 were quite homogeneous, and the omit rate for items 7, 8, and 9 was unusually high.

Table 2.1

Number and Percent of Majors Completing the PES

| College/Department | 1975 UG | % | GR | % | 1976 UG | % | GR | % |
|---|---|---|---|---|---|---|---|---|
| **Agriculture** | | | | | | | | |
| Agricultural Engineering | | | | | 76 | 65 | 10 | 67 |
| Agronomy | 62 | 69 | 48 | 67 | | | | |
| Animal Science | 196 | 73 | 61 | 68 | | | | |
| Food Science | 66 | 78 | 55 | 69 | | | | |
| Human Resources | | | | | 496 | 77 | 53 | 68 |
| Plant Pathology | | | | | | | 33 | 79 |
| **Applied Life Studies** | | | | | | | | |
| Health & Safety Education | 101 | 78 | 23 | 43 | | | | |
| Leisure Studies | 190 | 83 | 38 | 70 | | | | |
| Physical Education | 388 | 83 | 62 | 74 | | | | |
| **Commerce and Business Admin.** | | | | | | | | |
| Business Administration | | | | | 314 | 39 | 276 | 69 |
| Economics | 247 | 73 | 103 | 108 | | | | |
| **Education** | | | | | | | | |
| Educational Psychology | | | 151 | 66 | | | | |
| Elementary Education | 419 | 68 | 84 | 48 | | | | |
| Secondary Education | | | | | 55 | 61 | 86 | 65 |
| Special Education | | | | | 56 | 98 | 28 | 28 |

Table 2.1 (continued)

Number and Percent of Majors Completing the PES

| College/Department | 1975 UG | 1975 % | 1975 GR | 1975 % | 1976 UG | 1976 % | 1976 GR | 1976 % |
|---|---|---|---|---|---|---|---|---|
| Engineering | | | | | | | | |
| Aero. & Astro. Engineering | | | | | 56 | 51 | 15 | 43 |
| Ceramic Engineering | | | | | 25 | 46 | 21 | 70 |
| Civil Engineering | | | | | 511 | 81 | 210 | 75 |
| Computer Science | | | | | 248 | 71 | 144 | 63 |
| Electrical Engineering | | | | | 766 | 98 | 185 | 66 |
| General Engineering | | | | | 243 | 84 | | |
| Mech. & Ind. Engineering | | | | | 401 | 70 | 44 | 34 |
| Metal & Mining Engineering | | | | | 13 | 27 | 38 | 54 |
| Nuclear Engineering | | | | | 28 | 82 | 72 | 82 |
| Physics | | | | | 64 | 39 | 196 | 69 |
| Theoretical & Applied Mech. | | | | | 5 | 31 | 26 | 44 |
| Fine and Applied Arts | | | | | | | | |
| Architecture | 466 | 53 | 137 | 56 | | | | |
| Art and Design | | | | | 199 | 40 | 52 | 50 |
| Dance | 87 | 100 | 15 | 94 | | | | |
| Landscape Architecture | 102 | 73 | 24 | 69 | | | | |
| Music | 367 | 68 | 170 | 52 | | | | |
| Theatre | 83 | 33 | 22 | 51 | | | | |
| Urban Planning | 69 | 76 | 63 | 88 | | | | |
| Institute of Labor and Industrial Relations | | | 44 | 67 | | | | |

Table 2.1 (continued)

Number and Percent of Majors Completing the PES

| College/Department | 1975 UG | 1975 % | 1975 GR | 1975 % | 1976 UG | 1976 % | 1976 GR | 1976 % |
|---|---|---|---|---|---|---|---|---|
| Liberal Arts & Science | | | | | | | | |
| Astronomy | | | | | 16 | 80 | 13 | 93 |
| Biochemistry | | | | | 62 | 46 | 56 | 67 |
| Chemical Engineering | | | | | 205 | 76 | 34 | 63 |
| Classics | | | | | 13 | 87 | 10 | 48 |
| Ecol., Ethol., Evol. | 36 | 77 | 29 | 73 | | | | |
| Germanic Languages | | | | | 35 | 73 | 28 | 90 |
| History | | | | | 165 | 57 | 52 | 45 |
| Linguistics | 15 | 83 | 58 | 94 | | | | |
| Mathematics | | | | | 144 | 61 | 116 | 68 |
| Microbiology | 82 | 80 | 27 | 56 | | | | |
| Philosophy | | | | | 17 | 53 | 26 | 90 |
| Physiology & Biophysics | 53 | 71 | 66 | 73 | | | | |
| Speech Communication | 67 | 53 | 38 | 68 | | | | |
| Speech & Hearing Science | 121 | 114 | 38 | 47 | | | | |

Table 2.2

Percent of Students Responding to Each Alternative of the 1975 PES

| 1975 Item No. | Response Alternatives | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Undergraduates (N=3148) | | | | | | Graduates (N=1336) | | | | | |
| | 1 | 2 | 3 | 4 | 5 | omit | 1 | 2 | 3 | 4 | 5 | omit |
| 1 | 01 | 07 | 63 | 24 | 02 | 02 | 02 | 11 | 70 | 15 | 01 | 02 |
| 2 | 01 | 07 | 54 | 27 | 10 | 01 | 03 | 09 | 63 | 19 | 05 | -- |
| 3 | 11 | 28 | 51 | 09 | -- | 02 | 10 | 28 | 50 | 10 | 01 | 01 |
| 4 | 11 | 31 | 39 | 07 | 01 | 01 | 18 | 36 | 39 | 05 | 01 | -- |
| 5 | 03 | 11 | 67 | 14 | 04 | 01 | 05 | 16 | 69 | 07 | 02 | 01 |
| 6 | -- | 04 | 53 | 31 | 10 | 02 | -- | 04 | 58 | 29 | 09 | 01 |
| 7 | 03 | 08 | 37 | 14 | 06 | 33 | 02 | 05 | 23 | 09 | 05 | 56 |
| 8 | 03 | 09 | 26 | 09 | 03 | 50 | 02 | 12 | 54 | 09 | 03 | 20 |
| 9 | -- | 06 | 35 | 15 | 08 | 35 | 01 | 06 | 37 | 16 | 09 | 31 |
| 10 | 04 | 09 | 17 | 40 | 31 | 01 | 02 | 07 | 14 | 36 | 41 | 01 |
| 11 | 03 | 11 | 24 | 42 | 19 | 01 | 04 | 11 | 19 | 37 | 29 | -- |
| 12 | 05 | 18 | 31 | 33 | 12 | 01 | 07 | 22 | 26 | 30 | 14 | 01 |
| 13 | 03 | 13 | 29 | 35 | 18 | 01 | 06 | 15 | 22 | 32 | 24 | 01 |
| 14 | 04 | 16 | 36 | 33 | 10 | 02 | 02 | 12 | 30 | 33 | 21 | 02 |
| 15 | 05 | 18 | 42 | 27 | 06 | 02 | 05 | 16 | 37 | 29 | 11 | 02 |
| 16 | 04 | 12 | 28 | 30 | 25 | 01 | 04 | 08 | 20 | 29 | 38 | 01 |
| 17 | 09 | 17 | 27 | 29 | 17 | 01 | 07 | 16 | 23 | 32 | 22 | 01 |
| 18 | 09 | 20 | 37 | 20 | 10 | 03 | 11 | 20 | 32 | 21 | 10 | 05 |
| 19 | 08 | 18 | 29 | 28 | 15 | 02 | 09 | 15 | 25 | 27 | 22 | 02 |
| 20 | 04 | 10 | 36 | 30 | 19 | 02 | 03 | 04 | 20 | 26 | 45 | 01 |
| 21 | 07 | 15 | 39 | 25 | 12 | 02 | 07 | 09 | 34 | 12 | 07 | 32 |
| 22 | 04 | 09 | 46 | 18 | 10 | 14 | 16 | 12 | 34 | 26 | 17 | 04 |
| 23 | 03 | 09 | 19 | 34 | 34 | 01 | 02 | 07 | 14 | 32 | 45 | 01 |
| 24 | 04 | 11 | 22 | 41 | 21 | 01 | 02 | 10 | 16 | 41 | 29 | 01 |

2. Do students from the various departments differ in their responses to each item? This question relates to the potential discriminating power of each item; i.e., to what extent do students from the various departments differ in their responses? Is the total variability of student responses due to within or among departmental variation? Since one purpose of the PES was to provide information for comparisons among departments, four analyses were performed to determine the extent that each item discriminates among departments. Table 2.3 summarizes the results of these analyses.

First, the mean response of each item was calculated separately for undergraduates and graduates. The average response serves as an indicator of the degree of student satisfaction across all departments. For example, are graduates as a group satisfied with advising? (Column 1 presents these results with a value of 1 representing the alternative to the left, a "low" on the satisfaction items, and a value of 5 representing "high.") Second, the average variability of student responses within a department was calculated to indicate the degree of dissimilarity among student perceptions within the departments (Column 2). Students were in less agreement in their satisfaction with various dimensions of the department (Items 10-24) than in their responses to the descriptive items on departmental operations (Items 1-9).

Third, variability of the departmental means was calculated separately for undergraduates and graduates. The variance of the department means is not very large; thus the average student response of a department do not vary much from department to department. This same conclusion can be drawn from the fourth analysis; an eta squared ($\eta^2$) statistic analysis. The value of $\eta^2$, which represents the proportion of total variability of

Table 2.3

Overall Item Statistics for the 1975 PES

| 1975 Item No. | Mean | | $MS_w$ | | Var. of $\bar{X}$s | | $eta^2$ | | Reliability | |
|---|---|---|---|---|---|---|---|---|---|---|
| | U | G | U | G | U | G | U | G | U | G |
| 1 | 3.20 | 3.01 | .37 | .36 | .04 | .04 | .12 | .06 | .88 | .70 |
| 2 | 3.39 | 3.17 | .56 | .52 | .05 | .06 | .09 | .07 | .88 | .76 |
| 3 | 3.42 | 3.39 | .63 | .62 | .05 | .09 | .05 | .08 | .85 | .83 |
| 4 | 3.46 | 3.68 | .62 | .63 | .05 | .11 | .07 | .11 | .84 | .86 |
| 5 | 2.95 | 3.15 | .46 | .44 | .07 | .05 | .12 | .05 | .94 | .79 |
| 6 | 3.46 | 3.42 | .54 | .50 | .02 | .04 | .04 | .06 | .69 | .74 |
| 7 | 3.16 | 3.22 | .77 | .86 | .07 | .05 | .05 | .05 | .81 | .22 |
| 8 | 2.98 | 3.01 | .78 | .47 | .09 | .10 | .08 | .09 | .77 | .83 |
| 9 | 3.37 | 3.39 | .62 | .67 | .11 | .12 | .14 | .12 | .73 | .77 |
| 10 | 3.86 | 4.10 | 1.07 | .92 | .08 | .05 | .06 | .05 | .86 | .46 |
| 11 | 2.34 | 2.21 | .96 | 1.13 | .08 | .17 | .05 | .08 | .84 | .82 |
| 12 | 2.68 | 2.77 | 1.04 | 1.24 | .12 | .19 | .06 | .09 | .89 | .83 |
| 13 | 2.46 | 2.45 | 1.00 | 1.20 | .14 | .23 | .09 | .15 | .91 | .87 |
| 14 | 2.70 | 2.40 | .96 | 1.00 | .05 | .05 | .03 | .06 | .79 | .50 |
| 15 | 2.89 | 2.74 | .87 | 1.01 | .07 | .07 | .04 | .05 | .80 | .67 |
| 16 | 2.39 | 2.10 | 1.18 | 1.23 | .07 | .05 | .05 | .04 | .79 | .44 |
| 17 | 2.73 | 2.53 | 1.28 | 1.32 | .17 | .13 | .11 | .09 | .91 | .75 |
| 18 | 3.00 | 3.02 | 1.08 | 1.19 | .15 | .17 | .12 | .13 | .90 | .82 |
| 19 | 2.78 | 2.62 | 1.22 | 1.44 | .15 | .20 | .11 | .09 | .90 | .81 |
| 20 | 2.46 | 1.89 | .97 | .94 | .06 | .07 | .05 | .08 | .78 | .71 |
| 21 | 2.80 | 2.97 | 1.10 | 1.05 | .05 | .05 | .03 | .03 | .67 | .01 |
| 22 | 2.77 | 2.61 | .87 | 1.20 | .04 | .05 | .02 | .05 | .57 | .40 |
| 23 | 2.09 | 1.86 | 1.05 | .94 | .08 | .11 | .09 | .05 | .87 | .76 |
| 24 | 2.35 | 2.16 | 1.03 | .98 | .11 | .21 | .07 | .10 | .89 | .87 |

student response accounted for by variability due to departmental differences, was above .10 for only a few items but never exceeded .15. Thus for most of the items, less than 10 percent of the response variability can be attributed to departmental differences.

The fifth analysis involved the calculation of the Horst reliability coefficient for each item. This index provides a measure of the reliability of department means, which can be used for interdepartmental comparisons. It is a function of the variance of the mean ratings across all departments relative to the variance of the student ratings of a department around its departmental mean, where the within department variance is considered the best estimate of the error variance of the mean rating. The coefficient is greatly influenced by the total sample size (all students across all departments), but this is regarded as reasonable since more information produces greater confidence with respect to interdepartmental differences. Therefore, despite the low variability among departmental means and the low eta squared values, the reliability for several items was high (over .80).

3. Do students in the different class levels (freshman, sophomore, junior, senior, masters, and doctoral) differ in their responses to each item? Each of the five analyses shown in Table 2.3 were calculated for each class level. In general, freshmen were more variable in their responses to the items, indicating a greater lack of agreement in their assessment of the department, possibly due to a lack of experience. Because of these analyses and comments received from departmental faculty, the Departmental and COPE reports and the data analyses for the 1976 PES did not include freshmen responses.

The revision of the 1975 PES involved the deletion or rewording of seven of the 24 items. Items 6 and 16 were reworded; items 7 and 8 were deleted and replaced by new items, and items 3, 4, and 9 were placed in the 1976 PES section measuring student satisfaction. The four open-ended questions were retained.

1976 PES Instrument. Section I of the 1976 PES contains five biographical items including class status, sex, G.P.A., and number of semesters on campus in current major. Graduate students also indicate the department from which they obtained their undergraduate degree, and undergraduates indicate their transfer status and primary reason for choosing a major. Section II contains six items about program difficulty, structure, admission standards, and student attitude toward the program. Section III contains 18 items to which students indicate the degree they are satisfied with their program of study, variety of courses, quality of instruction, academic advising, vocational guidance, departmental support staff, and communication between students and faculty. There are four open-ended questions in Section V which are included on the back with the space for responses to 32 optional items.

The PES was administered to undergraduate and graduate majors in 26 departments being reviewed by COPE in 1976. The number and percent of students in those departments completing the PES is given in Table 2.1. In the majority of departments, over 60 percent of the majors completed the form.

## Administration of the PES

The item committee considered several alternatives in the administration of the PES. Since only majors in a department being reviewed needed

to complete the form, using class time in selected courses might result in some students being overlooked and others asked to complete more than one questionnaire. Administration by mail was discarded due to a predicted low return rate and possible mutilation of the scannable answer sheets. A call for a general meeting of all students in the departments would most likely have resulted in a small and unrepresentative sample.

The remaining alternative was to administer the PES during spring semester advance enrollment held late in the fall semester. Since most students advance enroll and departmental faculty are available for assistance this alternative appeared to be the most feasible. Each department was given the responsibility of establishing and implementing the administration of the PES during advance enrollment. Although the methods varied from department to department, the majority involved the students' completing the form individually. Departments with very high participation rates developed a registration procedure which made the completion of advance enrollment contingent upon completion of the PES. This system may, however, result in under-participation of seniors who will graduate at the end of the current semester.

Reporting System

A reporting system was designed so the information would provide feedback to the departments and faculty in a COPE review as well as to COPE and university administrators. A format was developed that would allow anyone to understand the results with a minimal knowledge of measurement and statistical terminology. The reporting system for the PES was given high priority by OIR staff in 1975 after faculty found considerable difficulty interpreting the 1974 results which were presented in numerical

terms on computer print-outs. To fulfill the goal of having easily-understood information that would be used by faculty and administration, OIR staff established three practices.

First, the report was designed and organized to take advantage of a pictorial presentation and to minimize the use of statistical symbols.

Second, the report was arranged so (a) comparative judgments among departments could be made for each item, and (b) assessments of the strengths and weaknesses of each department as viewed by the students could be portrayed for each item. Thus, the reports were designed to fulfill the two purposes of PES: to provide evaluative information that could be used for both formative and summative evaluation. The presentation of students' responses to each item provided departmental faculty with the degree of satisfaction that the majors expressed to the instructional dimensions included on the PES. Using low to high satisfaction as anchor points for each item, departmental staff could determine which dimensions of the department (as measured by the items) could be improved if student assessments were accurate and if students' needs were considered important. The presentation of item responses for all departments evaluated in a single profile format for each item allowed for comparative judgments among departments. This arrangement would allow COPE and administrators as well as the departmental staff to receive an indication of the relative student satisfaction with an instructional dimension for any department evaluated.

Third, an OIR staff member familiar with the report personally presented the reports to the faculty, department administrators, and COPE members. The thirty-minute to one-hour sessions were intended to help the users interpret the print-outs and to provide them with the opportunity to

ask any questions about the data analyses performed.

The Four Reports Used for the 1976 PES

The four reports distributed were:

1. Departmental Report
2. COPE Report
3. Student Subgroup Response Report
4. Optional Items Report

The three-page *Departmental Report* (presented in Table 2.4) summarizes responses of undergraduates and graduates from one department to each of the 24 items. The departmental profile indicates the student majors' perception of intra-departmental strengths and weaknesses. A profile approach is used to display the information. A series of plus signs (++) or asterisks (**) are used to indicate the middle 50 percent of the responses of undergraduates and graduates, respectively. From the PES Departmental Report, four questions can be asked about a department.

1. For each item, where is the location of the middle 50 percent range of student responses? The series of asterisks or plusses represent the middle 50 percent of the student responses and the location of this series indicates the location of these students' responses on a continuum from low to high satisfaction.
2. Are the middle 50 percent of the undergraduates' responses similar to the graduates; i.e., to what extent are the rows of plusses and asterisks overlapping?
3. Is the average response of the students similar to the university average? This can be determined by comparing the location of U (the university mean) and X (the department mean) in the row of asterisks or plusses.

Table 2.4

Departmental Report for a Department

1976 PROGRAM EVALUATION SURVEY
DEPARTMENTAL REPORT FOR Department 003

NUMBER OF STUDENTS SURVEYED
NUMBER OF STUDENTS ENROLLED

PROPORTION OF ENROLLED STUDENTS COMPLETING SURVEY

| ITEM | | 1 | 2 | 3 | 4 | 5 | | LG / GR | PROPORTION OF STUDENTS SURVEYED RESPONDING TO ITEM |
|---|---|---|---|---|---|---|---|---|---|
| 1. THE LEVEL OF DIFFICULTY OF YOUR MAJOR PROGRAM. | TOO EASY | | | ***X*U* | | L******X******* | TOO DIFFICULT | LG<br>GR | 1.00<br>0.98 |
| 2. THE AMOUNT OF STRUCTURE IN YOUR ACADEMIC PROGRAM (CURRICULUM). | TOO FLEXIBLE | | | *****XU** | | **U**X***** | TOO RIGID | LG<br>GR | 0.98<br>1.00 |
| 3. THE DEPARTMENTAL ADMISSION STANDARDS. | TOO HIGH | | ******X***L* | | | **X**L* | TOO LOW | LG<br>GR | 0.98<br>1.00 |
| 4. THE ORIENTATION OF THE MAJORITY OF YOUR COURSE WORK. | TOO GENERAL | | ******X*U** | | | U**X*** | TOO DETAILED | LG<br>GR | 0.98<br>1.00 |
| 5. YOUR PERCEPTION OF THE BALANCE BETWEEN DEPARTMENTAL ATTENTION TO UNDERGRAD AND GRAD PROGRAMS. | UNDERGRAD EMPHASIS | | | *****U*****X | | U ******X******* | GRAD EMPHASIS | LG<br>GR | 0.98<br>0.99 |

| | | 1 | 2 | 3 | 4 | 5 | | | |
|---|---|---|---|---|---|---|---|---|---|
| 6. DESCRIBE YOUR ATTITUDE TOWARD YOUR MAJOR PROGRAM. | INDIFFERENCE | | | | U*****X******* | | DEDICATION | LG<br>GR | 0.98<br>1.00 |
| 7. THE EXTENT TO WHICH YOU ARE CHALLENGED BY YOUR PROGRAM OF STUDY. | LOW | | | ******XU******* | | U *****X****** | HIGH | LG<br>GR | 0.98<br>0.93 |
| 8. THE EXTENT TO WHICH YOUR MAJOR PROGRAM PROVIDES A WELL-INTEGRATED SET OF COURSES. | LOW | | | ********U******** | | U*******X******** | HIGH | LG<br>GR | 0.98<br>0.93 |
| 9. THE OVERALL QUALITY OF INSTRUCTION IN YOUR MAJOR DEPARTMENT. | LOW | | | ********X*U***** | | U ******X******** | HIGH | LG<br>GR | 1.00<br>1.00 |
| 10. THE EXTENT TO WHICH A SOUND THEORETICAL FRAMEWORK IS DEVELOPED IN YOUR MAJOR PROGRAM. | LOW | | | ********XU******* | | U *****X******** | HIGH | LG<br>GR | 0.98<br>0.98 |
| 11. ON THE AVERAGE, THE QUALITY OF INSTRUCTIONAL MATERIALS USED BY INSTRUCTORS IN YOUR DEPARTMENT. | LOW | | | ******UX******** | | U******X******** | HIGH | LG<br>GR | 1.00<br>0.98 |

4. How variable are the student responses to each item? How much do students agree in their responses? The width of the row indicates the extent to which the students agree in their responses to an item.

In the *COPE Report*, a sample of which is included in Table 2.5, the student responses of all departments being reviewed for one year are displayed separately for each item. The COPE Report is designed to portray inter-departmental comparisons; i.e., to what extent are the responses of the majors in a department similar to the responses of majors in all the other departments being evaluated in any given year? The COPE Report answers three major questions:

1. Are student responses for a specific department different from student responses for each of the other departments included in the COPE review?

2. Do graduate and undergraduate students differ in their satisfaction with their major program from the average satisfaction of all students completing the PES? This can be determined by examining the placement of the symbols "U" (undergraduate university mean) and "G" (graduate university mean) relative to the series of "+" and "*" representing the student responses to each department.

3. Do students in a department cluster their responses around the departmental average? The question of the degree of symmetry of responses around the mean (arithmetic average) can be answered by comparing the mean with another measure, the median (the point at which one-half of the students are above and below).

The *Student Group Response Report* contains proportions of students answering each alternative of each item. Students' responses are presented

Table 2.5

Sample COPE Report for One Item

1976 PROGRAM EVALUATION SURVEY
COPE REPORT (DEPARTMENTAL COMPARISONS BY ITEM)

ITEM #19. THE CHANNELS OF COMMUNICATIONS BETWEEN FACULTY AND STUDENTS REGARDING STUDENT NEEDS AND CONCERNS.

LOW 1 — 2 — 3 — 4 — 5 HIGH

| | | SAMPLE SIZE | PROPORTION OF TOTAL ENROLLMENT |
|---|---|---|---|
| COLLEGE OF A | | | |
| Department 001 | | UG | 0.63 |
| | | GR | 0.67 |
| Department 002 | | UG | 0.76 |
| | | GR | 0.68 |
| Department 003 | INSUFFICIENT DATA | UG | 0.00 |
| | | GR | 0.75 |
| COLLEGE OF B | | | |
| Department 004 | | UG | 0.38 |
| | | GR | 0.68 |
| COLLEGE OF C | | | |
| Department 005 | | UG | 0.59 |
| | | GR | 0.83 |
| Department 006 | | UG | 0.96 |
| | | GR | 0.28 |
| COLLEGE OF D | | | |
| Department 006 | | UG | 0.48 |
| | | GR | 0.43 |
| Department 007 | | UG | 0.48 |
| | | GR | 0.70 |
| Department 008 | | UG | 0.80 |
| | | GR | 0.73 |
| Department 009 | | UG | 0.69 |
| | | GR | 0.81 |
| Department 010 | | UG | 0.96 |
| | | GR | 0.85 |
| Department 011 | INSUFFICIENT DATA | UG | 0.42 |
| | | GR | 0.00 |
| Department 012 | | UG | 0.68 |
| | | GR | 0.33 |

for subgroups of students classified by certain characteristics: sex, class status, number of semesters in major field, cummulative G.P.A., undergraduate degree (graduates only), reason for choosing major (undergraduates only), transfer status (undergraduates only), attitude toward major, and division of the department if appropriate. A separate print-out is generated for graduate and undergraduate majors. Table 2.6 presents the student responses to one item only.

More specific information about a department, especially how different subgroups of students within a department respond to each item, can be found by examining the print-out. Knowledge of proportions and several statistical concepts is necessary to understand this report however.

If a department wished to ask its majors to respond to additional optional items, the number and proportion of graduates and undergraduates responding to each alternative of each item is presented in the *Optional Items Report*.

Table 2.6

Sample Student Group Response Report for One Item

DATE 02/01/1977 ---------- Q U I C T A B (QUESTIONNAIRE ITEM CROSS TABULATION PROGRAM) - (VERSION 3/1975) ---------- PAGE 26

1976 PES Department 003 UNDERGRAD

(ITEM 19) (SATISFACTION WITH) THE CHANNELS OF COMMUNICATIONS BETWEEN FACULTY AND STUDENTS REGARDING STUDENT NEEDS, CONCERNS AND SUGGESTIONS.

| RESPONSES (REST=H) | TOTAL | STATUS | | | | | SEX | | # SEMS IN MAJOR UI | | | | CUMULATIVE GPA | | | | TRANSFERRED? | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SO | JR | SR | NSTR | OR | M | F | 0-1 | 2-3 | 4-5 | 6-6+ | 4.71 CR + | 4.21 4.70 | 3.71 4.20 | 3.70 OR - | ACT TR | 4 YR SCH | 2 YR SCH |
| LOW(1) | 0.06 | 0.06 | 0.07 | 0.04 | 0.00 | 0.00 | 0.08 | 0.05 | 0.02 | 0.07 | 0.06 | 0.07 | 0.00 | 0.03 | 0.05 | 0.17 | 0.05 | 0.03 | 0.10 |
| | 0.19 | 0.32 | 0.20 | 0.11 | 0.00 | 0.00 | 0.18 | 0.17 | 0.22 | 0.23 | 0.20 | 0.10 | 0.42 | 0.21 | 0.11 | 0.22 | 0.22 | 0.13 | 0.05 |
| | 0.25 | 0.15 | 0.26 | 0.27 | 0.00 | 0.00 | 0.23 | 0.26 | 0.32 | 0.18 | 0.26 | 0.21 | 0.17 | 0.25 | 0.24 | 0.17 | 0.22 | 0.25 | 0.38 |
| | 0.30 | 0.21 | 0.28 | 0.37 | 0.00 | 0.00 | 0.24 | 0.33 | 0.22 | 0.37 | 0.24 | 0.38 | 0.08 | 0.28 | 0.35 | 0.39 | 0.34 | 0.25 | 0.24 |
| HIGH(5) | 0.18 | 0.24 | 0.15 | 0.19 | 0.00 | 0.00 | 0.22 | 0.17 | 0.15 | 0.11 | 0.22 | 0.21 | 0.25 | 0.21 | 0.20 | 0.04 | 0.16 | 0.25 | 0.19 |
| OMIT | 0.03 | 0.03 | 0.04 | 0.01 | 0.00 | 0.00 | 0.05 | 0.02 | 0.05 | 0.05 | 0.00 | 0.02 | 0.08 | 0.01 | 0.05 | 0.00 | 0.02 | 0.09 | 0.05 |
| N | 199 | 34 | 92 | 73 | 0 | 0 | 62 | 132 | 46 | 57 | 54 | 42 | 12 | 71 | 80 | 23 | 114 | 32 | 21 |
| MEAN | 3.38 | 3.24 | 3.27 | 3.57 | 0.00 | 0.00 | 3.37 | 3.41 | 3.26 | 3.22 | 3.37 | 3.59 | 3.18 | 3.44 | 3.57 | 2.91 | 3.33 | 3.62 | 3.40 |
| MEDIAN | 3.49 | 3.20 | 3.33 | 3.65 | 0.00 | 0.00 | 3.46 | 3.53 | 3.15 | 3.50 | 3.37 | 3.78 | 3.75 | 3.50 | 3.71 | 3.13 | 3.50 | 3.69 | 3.38 |
| S.D. | 1.16 | 1.32 | 1.16 | 1.06 | 0.00 | 0.00 | 1.27 | 1.11 | 1.08 | 1.16 | 1.20 | 1.16 | 1.33 | 1.14 | 1.11 | 1.24 | 1.14 | 1.15 | 1.19 |

| RESPONSES (REST=H) | TOTAL | REASON FOR MAJOR | | | | ATTITUDE | | | DIVISION | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | GRAD | VOCA | NEI-THER | OTH-ER | IN-DIF | AVE-RAGE | DED-ICAT | A | B | C | D | E | F | G | H | I |
| LOW(1) | 0.06 | 0.07 | 0.03 | 0.08 | 0.06 | 0.67 | 0.00 | 0.05 | 0.00 | 0.00 | 0.00 | 0.00 | 0.12 | 0.00 | 0.11 | 0.00 | 0.00 |
| | 0.19 | 0.21 | 0.17 | 0.17 | 0.22 | 0.00 | 0.23 | 0.10 | 0.23 | 0.15 | 0.10 | 0.20 | 0.25 | 0.26 | 0.16 | 0.00 | 0.24 | 0.00 | 0.00 |
| | 0.25 | 0.21 | 0.25 | 0.26 | 0.39 | 0.33 | 0.23 | 0.20 | 0.23 | 0.27 | 0.31 | 0.40 | 0.25 | 0.16 | 0.16 | 0.00 | 0.19 | 0.18 | 0.25 |
| | 0.30 | 0.31 | 0.32 | 0.29 | 0.22 | 0.00 | 0.46 | 0.00 | 0.33 | 0.32 | 0.36 | 0.40 | 0.50 | 0.37 | 0.36 | 0.20 | 0.26 | 0.09 | 0.50 |
| HIGH(5) | 0.18 | 0.17 | 0.18 | 0.21 | 0.11 | 0.00 | 0.00 | 0.10 | 0.13 | 0.28 | 0.21 | 0.00 | 0.00 | 0.11 | 0.20 | 0.00 | 0.20 | 0.64 | 0.00 |
| OMIT | 0.03 | 0.03 | 0.06 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.05 | 0.03 | 0.00 | 0.00 | 0.11 | 0.00 | 0.20 | 0.00 | 0.09 | 0.25 |
| N | 199 | 29 | 72 | 66 | 18 | 3 | 13 | 10 | 61 | 82 | 39 | 15 | 8 | 19 | 25 | 5 | 54 | 11 | 4 |
| MEAN | 3.38 | 3.32 | 3.49 | 3.39 | 3.11 | 1.67 | 3.08 | 3.70 | 3.26 | 3.59 | 3.68 | 3.20 | 3.25 | 3.35 | 3.36 | 3.25 | 3.20 | 4.50 | 3.67 |
| MEDIAN | 3.49 | 3.50 | 3.59 | 3.56 | 3.07 | 1.25 | 3.33 | 3.83 | 3.38 | 3.61 | 3.71 | 3.25 | 3.50 | 3.57 | 3.67 | 3.17 | 3.30 | 4.79 | 3.75 |
| S.D. | 1.16 | 1.22 | 1.06 | 1.21 | 1.08 | 1.15 | 1.04 | 0.82 | 1.13 | 1.18 | 0.93 | 0.77 | 0.89 | 1.06 | 1.32 | 0.80 | 1.32 | 0.85 | 0.50 |

## Chapter 3

## THE USEFULNESS AND VALIDITY OF THE PES

This chapter presents a summary of the results of a study concerning the utility of the PES for both program improvement and summative evaluation and results of several validity studies conducted on both the 1975 and 1976 PES. Three types of validity--structural, discriminant, and criterion related--are used to organize the results of the validity studies.

### Usefulness of the PES at the Departmental Level

The comprehensive evaluation of PES included a survey of the usefulness of PES information to departmental representatives. Four major questions served as guidelines to assess the utility of the PES as a source of information to be used to determine departmental policy:

1. Did the PES measure the salient dimensions of departmental quality?
2. Was administration of the PES satisfactory?
3. Were the PES results easily understandable?
4. Was PES information used, and if so, how and what were the consequences of its use?

In order to investigate the acceptablility and usefulness of the PES, structured interviews were conducted with representatives of departments which had used the instrument. All 48 of the departments who administered the PES to their majors as a part of the COPE review process in 1975 and 1976 were contacted. Interviews were held with representatives in 44 of the 48 departments. (The four remaining departments had not yet had an opportunity to thoroughly study their PES results and preferred to defer

their comments until they had done so.) Eighty-nine percent of the interviews were held with department heads or chairpersons; the remainder were with departmental COPE contact persons who had been responsible for the administration of the PES in their departments. The interviews were conducted in person in 80% of the departments; the remainder were telephone interviews. Questions asked of the departmental representatives dealt with item content and administration procedures, reporting methods, and usefulness of the PES.

Item Content

When asked about the comprehensiveness of the PES, 92% of those responding indicated that the items covered most of the important aspects of the department about which students could provide meaningful and appropriate information. Those dissenting were representatives of departments concerned with the creative arts or laboratory sciences, who felt that some of the special characteristics of their departments were not represented. Nearly a third of the respondents mentioned that they had found the four open-ended questions to be very useful in providing more detailed information, and a quarter of the respondents mentioned the usefulness of the optional items. Some suggested that a larger pool of optional items be developed, dealing with issues pertinent to graduate students, laboratory research, and the creative arts. Items concerning prelims, teaching assistantships, recognition of doctoral students as professional peers, student involvement in research, quantity and quality of laboratory equipment and instruction--items especially relevant to graduate students--would enhance the diagnostic value of the PES.

Administration Procedures

Four of every five departmental faculty indicated that administering the PES to students during advance enrollment had worked well. Some departments would prefer to administer the PES in classes, and several departments suggested administering it during the spring rather than the fall semester, in order to allow new students more exposure to the department. It was also suggested that special efforts might be made to administer the PES to graduating seniors, due to their extended experience with the department.

PES Reporting System

The evaluation of the reporting system reinforced the importance of the guidelines established for presenting feedback. Ninety-three percent of the respondents indicated that the computer reports had been easily understandable; those disagreeing had found the Student Subgroup Report, which was not specifically designed for the COPE review process, to be somewhat difficult to interpret due to its dependence on strictly numerical presentation. Seventy-nine percent felt that the amount of information provided by the reports had been about right; but surprisingly the remainder felt that too much information had been provided. Several departments mentioned that a summarization of the data in the form of PES scale scores would be helpful. (Only the item responses have been distributed thus far; scale scores based on the factor analysis of the 1976 PES will be calculated and reported in the future). The practice of having an OIR staff member make a personal presentation was considered very helpful.

When asked which reports had been the most useful, respondents most frequently named the COPE Report, due to ease of making comparative judgments. However, it was suggested that each department be allowed to choose

several related departments which would be shown on the COPE Report for comparative purposes, rather than displaying only the departments undergoing COPE evaluation in the same year. The Departmental Report and the Student Subgroup Report were also mentioned as being useful. The Student Subgroup was especially appreciated by those departments who took advantage of the divisional breakdown option. Other departments used it primarily as a backup, when more detailed information was desired about a particular item.

Usefulness of PES

Several methods were used by the departments to disseminate the PES results, with many departments making use of more than one method. In 49% of the departments, results were presented at faculty meetings; committees, such as Advisory Committees, Executive Committees, and internal COPE Committees, discussed the results in 47% of the departments. Forty-two percent of the departments made the PES reports available for faculty examination, and twenty-eight percent distributed either the reports or summaries of the reports to their faculty. In 21% of the departments PES results were also disseminated to students, either by making the reports available for student examination through student meetings, or through student representation on departmental committees.

When asked whether they were surprised by the PES results, 64% of the departmental representatives indicated that the results had verified and documented their perceptions of student opinion; many felt that this confirmation was useful. The remaining 36% indicated that the results were, for the most part, consistent with their expectations, except for one or two areas where they had not anticipated student dissatisfaction.

Some departments had expected dissatisfaction in certain areas, but were somewhat surprised by the extent of the dissatisfaction.

Comments from respondents indicated that in various departments the PES results had forced them to confront various problem areas, had reinforced the need for changes they had been considering, and had given the department head additional ammunition to push for proposed changes. In addition, the data provided valuable background information for standing committees and was considered a possible source of public relations data.

Sixty-four percent of the departments either had taken, or were planning to take, specific actions intended to deal with areas of dissatisfaction shown by the PES. A few of the remaining departments were waiting to receive additional feedback from COPE Council before taking action on the PES results, and in several departments the positive nature of the results indicated that no action was necessary.

Specific actions taken by the departments included the following: meeting with students to discuss areas of dissatisfaction; establishing ongoing committees on program evaluation and graduate student matters; setting up periodic meetings with lower level undergraduates to improve communications; increasing the number of course offerings; and providing more enrichment activities. PES results were taken into account in the revision of graduate and undergraduate programs, and the desire for a greater variety of course offerings was taken into account when hiring new faculty. One department planned to give more vocational guidance information by having speakers come in to talk about various jobs, and another department provided graduate students with more help with their teaching assistantships by establishing files of pertinent information, providing suggested syllabi, and increasing faculty availability. Several departments

took steps to improve academic advising, including planning a faculty workshop dealing with advising, preparing a booklet of detailed course descriptions which was made available to students, and training secretarial staff to help with advising.

When asked whether they would be interested in using the PES other than when it was required as part of the COPE review process, 77% of the departments indicated that they might be interested in administering the PES to their students again in the next two or three years. Many suggested uses of the PES were given: administration to all majors on a regular basis every few years; administration to graduating seniors, graduating graduate students, and alumni; use as a part of accreditation reviews and ongoing departmental program evaluation systems; and administration before and after planned program revisions.

In summary, interviews with departmental representatives indicated that the majority felt that the PES item content was comprehensive, the administration procedures were satisfactory, and the computer reports were easily understandable. The results were widely distributed and stimulated departments to take specific actions to deal with areas of student dissatisfaction. Perhaps most indicative of the usefulness of the PES is the fact that, although the initial administration was required as part of the COPE evaluation, over three-quarters of the departments indicated an interest in using the PES again apart from the COPE review process. These results indicate that the PES is regarded by departmental faculty as a useful tool in a program of departmental self-evaluation.

## Structural Validity

Structural validation pertains to the identification of dimensions or factors of student satisfaction with their academic environment as

measured by the PES. Does the PES measure a single dimension of student satisfaction, or several interpretable dimensions? If the only intended use of these satisfaction ratings were decidedly summative, then a unidimensional measure of satisfaction would suffice. Since the intended uses of PES also includes the identification of program strengths and weaknesses, then the questionnaire must measure more than one interpretable dimension of student satisfaction. Structural validity also pertains to the stability of factor structures obtained from PES questionnaire data. Do the same interpretable factors appear in data obtained from different student groups, (e.g., undergraduates and graduates) or does the factor structure vary from group to group? Do the scales measuring the factors have the same interpretation for the various academic departments?

Three separate analyses of the structural validity of the PES were performed. A hierarchical factor analysis was conducted on the 1975 data and cross-validated on the 1976 data. A factor analysis based on the 1976 PES responses and responses to an additional set of 22 bipolar adjectives was also conducted.

Analysis I

Hierarchical factor solutions were obtained from the responses of 2,752 undergraduates and 1,108 graduates from the 22 departments completing the 1975 PES. The biographical information for these students is given in Table 3.1. The factor analyses were based on student responses to items 10-24, those items measuring student satisfaction. For these items matrices of interitem correlations with maximum row correlations replacing the diagonal elements were factored for the graduate and undergraduate samples. In order to cross-validate these factor structures, solutions were also computed for five subsamples. Subsamples were obtained by dividing grad-

Table 3.1

Percent of Students with Various Demographic Characteristics Completing the 1975 PES

| Status | | Sex | | Number of complete semesters in major | | Cumulative GPA | |
|---|---|---|---|---|---|---|---|
| **Undergraduates (N = 2,752)** | | | | | | | |
| Freshman | 17 | Male | 41 | 0 - 1 | 31 | 3.6 or below | 17 |
| Sophomore | 24 | Female | 48 | 2 - 3 | 33 | 3.61 - 4.59 | 64 |
| Junior | 30 | Omits | 11 | 4 - 5 | 22 | 4.6 or above | 12 |
| Senior | 29 | | | 6 plus | 14 | Omits | 07 |
| Omits | 00 | | | Omits | 00 | | |
| **Graduates (N = 1,108)** | | | | | | | |
| Masters | 63 | Male | 57 | 0 - 1 | 32 | 3.6 or below | 01 |
| Doctoral | 37 | Female | 34 | 2 - 3 | 24 | 3.61 - 4.59 | 44 |
| Omits | 00 | Omits | 09 | 4 - 5 | 17 | 4.6 or above | 46 |
| | | | | 6 plus | 27 | Omits | 09 |
| | | | | Omits | 00 | | |

uate and undergraduate samples into groups of subjects enrolled in related academic disciplines. Comparability of all solutions was checked by multiplying final factor loadings for each item by their respective standard deviations obtained in the main samples. Since there was sufficient comparability among all the subsamples, only the solutions for undergraduates and graduates were further analyzed.

The first-order factor solutions were obtained by Simple Common Factor Analysis, a program which is part of the SOUPAC Statistical Package (Computing Services Office, Note 1). Factor extraction was followed by oblique (binormamin) rotations. Criteria for determining the number of factors to be retained included the procedure suggested by Humphreys and Montanelli (1976) by which eigenvalue plots are compared to those plots which might occur by chance. The initial three first-order factors that emerged for both undergraduates and graduates were very similar. These factors were identified as

I. Satisfaction with faculty mentorship.

II. Personal value in studies.

III. Staisfaction with instructional procedures.

However, a fourth factor defined by a single item "satisfaction with the accessibility of instructors" was obtained from the graduate student data. The three first-order factors proved to be highly intercorrelated, indicating that first-order solutions did not provide a complete picture of the data structures. Therefore, hierarchical factor solutions were obtained by the Schmid-Leiman transformation (1957) which is the result of successive extraction of higher-order factors from matrices of intercorrelations among oblique lower-order factors.

With a hierarchical solution the same first-order factors, referred to as specific factors, always remain, but due to the successive factor extraction of these lower-order factors, various general factors of varying complexity can result. These general factors represent dimensions which underlie the specific factors. Since only three first order factors were obtained with the PES, only one higher-order factor was possible. The single second-order factor that was extracted was labeled "Overall Satisfaction with the Academic Department" which reflects a "rating halo".

Table 3.2 presents the hierarchical factor matrix for those items loading .3 or above. Three items loaded .3 or above for both undergraduates and graduates, or for each of the three specific factors. The only items which did not produce any meaningful loadings on <u>any</u> factor were the two class size items. The general factor carried substantial loadings from all PES items with the exception of the two class size items. Largest loadings on this factor were obtained from items having very general referrents--"overall satisfaction," "worth of program," "instruction," "academic guidance,"--with lower loadings obtained either from specific referrents--"texts and materials," "support staff," "evaluation procedures,"--or from items which referred directly to the student's intrinsic involvement in learning--"dedication," "feeling of challenge."

To enable future investigations of the discriminating power of factors, the three dominant items associated with each specific factor were used to form three unweighted composite scales. Items selected for the scales, and coefficient alphas for these scales in the graduate and undergraduate samples, are given in Table 3.3. Intercorrelations among the three scales are reported in Table 3.4. Average scale intercorrelation was .46 for undergraduates and .55 for graduates, indicating a fair degree

Table 3.2

Hierarchical Factor Solutions for the 1975 PES Items

| 1975 Item Number | Overall Satisfaction | | Mentorship | | Personal Value | | Instruction | | Accessibility | |
|---|---|---|---|---|---|---|---|---|---|---|
| | UG | GR | UG | GR | UG | GR | UG | GR | UG | GR |
| 10 | .40 | .39 | | | .52 | .51 | | | | |
| 11 | .44 | .56 | | | .30 | | .21 | .36 | | |
| 12 | .54 | .54 | | | | | .27 | .39 | | |
| 13 | .60 | .65 | | | | | .43 | .41 | | |
| 14 | .51 | .55 | | | | | .50 | .47 | | |
| 15 | .49 | .56 | | | | | .37 | .33 | | |
| 16 | .44 | .53 | .38 | .13 | | | | | | .44 |
| 17 | .63 | .69 | .52 | .40 | | | | | | |
| 18 | .56 | .64 | .55 | .50 | | | | | | |
| 19 | .57 | .63 | .48 | .37 | | | | | | |
| 20 | .31 | .28 | .34 | .00 | | | | | | |
| 21 | | | | | | | | | | |
| 22 | | | | | | | | | | |
| 23 | .63 | .67 | | | .57 | .51 | | | | |
| 24 | .70 | .75 | | | .49 | .35 | | | | |

NOTE: Except for comparative purposes, only loadings over .3 are reported.

51-A

51-B

Table 3.3

Coefficient Alphas for 1975 PES Scales

| | Scales | Undergraduate | Graduate |
|---|---|---|---|
| I. | Satisfaction with mentorship | .80 | .82 |
| | 17. Academic guidance | | |
| | 18. Vocational guidance | | |
| | 19. Faculty-student communication | | |
| II. | Personal Value | .80 | .80 |
| | 10. Student dedication | | |
| | 23. Worth of program | | |
| | 24. Satisfaction with program | | |
| III. | Satisfaction with instruction | .72 | .75 |
| | 13. Quality of instruction | | |
| | 14. Quality of texts | | |
| | 15. Classroom evaluation procedures | | |

Table 3.4

Intercorrelations of the 1975 PES Scales[1]

| | Mentorship | Value | Instruction |
|---|---|---|---|
| Mentroship | | .59 | .52 |
| Value | .49 | | .55 |
| Instruction | .41 | .50 | |

[1]Correlations for graduates are presented in upper diagonal; correlations for undergraduates are in lower diagonal.

of interdependence among factor measures. The internal consistency coefficients were substantially higher, however, offering evidence that the specific factors were measuring unique aspects of the instructional program in a department, over and above the general (halo) factor.

In addition, the demographic items (Items 1-6 of Section I) such as class status and G.P.A., were uncorrelated with the three subscales. In neither the graduate nor undergraduate sample were any correlations above .11 which indicates that none of the scales were confounded with the several demographic variables. The degree of student satisfaction is not a function of student characteristics e.g., class status or G.P.A.

Analysis II

To cross validate the findings of the 1975 analyses, a hierarchical factor analysis was performed on the 1976 PES responses. The cross validation was not an exact replication, however. The 1976 PES was a revised version and freshmen data were deleted. In addition, the departments reviewed in 1975 and 1976 were not parallel sets of departments since twelve departments in the 1976 review were from one College. Given these caveats, the same questions regarding the structural validity of the PES were again investigated.

Table 3.5 presents the characteristics of the 4,213 undergraduates and 1,824 graduates whose data were used in the analyses of the 1976 PES. The four first-order factors that were retained were similar for both undergraduates and graduates. These factors were:

I. Satisfaction with Mentorship

II. Personal Value

III. Satisfaction with Instruction

IV. Satisfaction with Curricular Offerings

Table 3.5

Percent of Students with Various Demographic Characteristics Completing the 1976 PES

| Status | | Sex | | Number of complete semesters in major | | Cumulative GPA | |
|---|---|---|---|---|---|---|---|
| **Undergraduates (N = 4,213)** | | | | | | | |
| Freshman | 00 | Male | 69 | 0 - 1 | 16 | 3.7 or below | 28 |
| Sophomore | 28 | Female | 28 | 2 - 3 | 37 | 3.71 - 4.2 | 33 |
| Junior | 37 | Omits | 02 | 4 - 5 | 26 | 4.21 - 4.7 | 24 |
| Senior | 35 | | | 6 plus | 19 | 4.71 or above | 09 |
| Omits | 00 | | | Omits | 02 | Omits | 06 |
| **Graduates (N = 1,824)** | | | | | | | |
| Masters | 56 | Male | 79 | 0 - 1 | 29 | 3.7 or below | 01 |
| Doctoral | 44 | Female | 16 | 2 - 3 | 28 | 3.71 - 4.2 | 09 |
| Omits | 00 | Omits | 05 | 4 - 5 | 13 | 4.21 - 4.7 | 32 |
| | | | | 6 plus | 28 | 4.71 or above | 40 |
| | | | | Omits | 02 | Omits | 19 |

The first three factors were the same as the three that emerged in the 1975 factor analyses. The same items defined each of these factors in both 1975 and 1976, although in the 1976 analysis the factors, Satisfaction with Mentorship and Satisfaction with Instruction, each consisted of an additional item. The fourth factor, Satisfaction with Curricular Offerings, consisted of three items, two of which were revisions of 1975 PES items; one item (availability of enrichment activities) had a loading below .3, however.

The hierarchical factor solutions of the 1976 PES data are presented in Table 3.6. A single second-order factor was found which was similar to the factor "Overall Satisfaction with the Academic Department" obtained in the 1975 analyses. The same pattern of loadings was also obtained, with items with general referrents--"quality of instruction," "worth of program" and "overall satisfaction"--having the highest loadings on this factor.

Unweighted composite scales, consisting of items with loadings of .3 or above on each of the four factors, were constructed. Coefficient alphas shown in Table 3.7 for three of the scales exceeded .70 which indicates a relatively high degree of internal consistency whereas the coefficient for the fourth scale, Satisfaction with Curricular Offering, was lower for undergraduates. Even though this scale contains items with lower factor loadings and it was not found in the factor analyses of the 1975 PES, the scale was retained because of its interpretability resulting from the logical interrelationships among the three items.

The intercorrelations among the scale scores are presented in Table 3.8. The correlations of about .50 indicate some independence but they are significantly less than the internal consistency coefficients, indicating a reasonable degree of uniqueness associated with each subscale.

Table 3.6

Hierarchical Factor Solutions for 1976 PES Items

| 1976 Item Number | Overall Satisfaction | | Mentorship | | Personal Value | | Instruction | | Curricular Offerings | |
|---|---|---|---|---|---|---|---|---|---|---|
| | UG | GR | UG | GR | UG | GR | UG | GR | UG | GR |
| 6. | .38 | .35 | | | .52 | .46 | | | | |
| 7. | .40 | .54 | | | | | | | | |
| 8. | .55 | .63 | | | | | | | .40 | .31 |
| 9. | .59 | .63 | | | | | .33 | .38 | | |
| 10. | .54 | .59 | | | | | .30 | .25 | | |
| 11. | .48 | .51 | | | | | .37 | .36 | | |
| 12. | .49 | .51 | | | | | .33 | .34 | | |
| 13. | .42 | .46 | | | | | | | .13 | .29 |
| 14. | .45 | .55 | | | | | | | .44 | .48 |
| 16. | .46 | .52 | .49 | .53 | | | | | | |
| 17. | .50 | .60 | .52 | .44 | | | | | | |
| 18. | .52 | .54 | .51 | .43 | | | | | | |
| 19. | .55 | .59 | .50 | .49 | | | | | | |
| 20. | .36 | .32 | | | | | | | | |
| 21. | | | | | | | | | | |
| 22. | | | | | | | | | | |
| 23. | .62 | .61 | | | .53 | .55 | | | | |
| 24. | .71 | .73 | | | .41 | .42 | | | | |

NOTE: Except for comparative purposes, only loadings over .3 are reported.

Table 3.7

Coefficient Alphas for 1976 PES Scales

| Scales | Undergraduate | Graduate |
|---|---|---|
| I. Satisfaction with mentorship | .80 | .82 |
| 16. Contact with faculty | | |
| 17. Academic advising | | |
| 18. Vocational guidance | | |
| 19. Faculty-student communication | | |
| II. Personal value | .78 | .78 |
| 6. Student dedication | | |
| 23. Worth of program | | |
| 24. Satisfaction with program | | |
| III. Satisfaction with instruction | .71 | .74 |
| 9. Quality of instruction | | |
| 10. Development of sound theoretical framework | | |
| 11. Quality of texts | | |
| 12. Classroom evaluation procedures | | |
| IV. Satisfaction with curricular offerings | .57 | .68 |
| 8. Integration of courses | | |
| 13. Availability of enrichment activities | | |
| 14. Variety of course offerings | | |

Table 3.8

Intercorrelations of the 1976 PES Scales[1]

| | Mentorship | Value | Instruction | Curriculum |
|---|---|---|---|---|
| Mentorship | | .49 | .54 | .47 |
| Value | .40 | | .54 | .49 |
| Instruction | .48 | .52 | | .56 |
| Curriculum | .43 | .45 | .50 | |

[1]Correlations for graduates are presented in upper diagonal; correlations for undergraduates are in lower diagonal.

Analysis III

The third analysis designed to investigate the structural validity of the PES, involved a comparison between the PES and another survey instrument, known as the Optional Item Form. In the early tryouts of the PES, graduate and undergraduate students were asked to make comments about their departments and about the PES. From these written comments, a list of adjectives used by students to describe their departments was compiled. Following a content analysis, items in this list were edited and cast into a bi-polar adjective format (semantic differential) which could be appended as optional items to the PES.

The first version of the optional item form was administered in spring 1976 to students in a single professional school. Based on a factor analysis of the student responses as well as consideration of item distributions and omit rates, a set of revised optional items was developed

and made available for the fall 1976 administration. The optional items, presented in Appendix C, consist of 22 bipolar adjective pairs set in a five-point response format which are used by students to describe their program of study and departmental faculty.

Five departments reviewed in 1976 agreed to administer a set of 22 optional items along with the 1976 PES. The analyses in this section involve the responses of students from only these five departments. The student samples included 564 undergraduate and 940 graduate students who voluntarily responded to both forms. These samples represented approximately 85% of the total number of students surveyed in these five departments, and about 50% of the total enrollment for these departments.

To provide a further check on the stability (invariance) of the factor structure of the PES, hierarchical factor solutions of the PES responses for those students from the five departments were performed and then compared with the previous factor solutions. The PES factor weights for both undergraduate and graduate samples were highly similar to those obtained in the previous studies (Analyses I and II). Due to these results, it was assumed that the conclusions drawn from the analyses based on these two samples should generalize to the student population from the 26 departments.

Next, a factor analysis of the student responses to the 22 optional items, run separately for undergraduates and graduates, was used to identify the dimensions students use to describe their department. Four specific and two general factors emerged as the dimensions by which students characterize their department. The same first-order oblique factors were found in both samples and the factor loadings were very similar across the two samples. These factors were labeled: I) Faculty concern

for students; II) Difficulty of program; III) Personal value in studies; IV) Structure in program. The two higher order factors were labeled: I) Departmental support of students and II) Departmental challenge.

Finally, a factor analysis of the 17 satisfaction items of the 1976 PES and the 22 optional items was conducted, separately for undergraduates and graduates, to better define the dimensions of the PES. Table 3.9, which presents the results of the hierarchical factor solutions based on the combined set of items, shows that seven factors, two general and five specific, are required to account for the different dimensions measured by the items. The factor structure, which was reasonably invariant in the undergraduate and graduate groups, consisted of the following labeled factors:

First order factors

I. Faculty Approachability

II. Difficulty of Program

III. Personal Value in Studies

IV. Satisfaction with Instruction

V. Satisfaction with Faculty Mentorship

Second order factors

I. Departmental Support of Students

II. Departmental Challenge

The first factor, Faculty Approachability is defined (loadings of .3 or greater) entirely by items in the optional form, whereas the fifth factor, Satisfaction with Faculty Mentorship, consists of items only from the PES. The remaining factors are defined by items from both instruments. The items loading on the factors, Personal Value and Mentorship,

## Table 3.9

Hierarchical Factor Solutions for the Combined 1976 PES and Optional Items

| | Support | | Challenge | | Approachability | | Difficulty | | Value | | Instruction | | Mentorship | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Item | UG | GRAD | UG | GRAD | UG | GRAD | UG | GRAD | UG | GRAD | UG | GRAD | UG | GRAD |
| 6 | .34 | .32 | (.23) | .36 | | | | | .51 | .42 | | | | |
| 7 | (.27) | .32 | .42 | .51 | | | .30 | .34 | | | | | | |
| 8 | .41 | .34 | .34 | .43 | | | | | | | .33 | .40 | | |
| 9 | .51 | .53 | (.25) | .35 | | | | | | | .32 | .30 | | |
| 10 | .39 | .37 | (.28) | .41 | | | | | | | .36 | .35 | | |
| 11 | .39 | .42 | (.23) | .35 | | | | | | | | | | |
| 12 | .42 | .46 | | | | | | | | | | | | |
| 13 | .32 | .33 | | | | | | | | | | | (.23) | .33 |
| 14 | .34 | .38 | (.26) | .36 | | | | | | | .30 | (.21) | | |
| 16 | .45 | .53 | | | | | | | | | | | .43 | .51 |
| 17 | .47 | .57 | | | | | | | | | | | .52 | .41 |
| 18 | .46 | .46 | | | | | | | | | | | .50 | .41 |
| 19 | .53 | .59 | | | | | | | | | | | .44 | .40 |
| 20 | (.28) | .37 | | | | | | | | | | | | |
| 21/22 | | | | | | | | | | | | | | |
| 23 | .46 | .48 | .37 | .52 | | | | | .57 | .39 | | | | |
| 24 | .55 | .57 | .34 | .52 | | | | | .47 | (.29) | | | | |
| 1 | -.41 | -.47 | -.33 | -.46 | | | | | -.45 | .43 | | | | |
| 2 | (.20) | .32 | .36 | .44 | | | .33 | .33 | | | | | | |
| 3 | -.57 | | -.46 | -.43 | | | -.58 | -.63 | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | -.46 | -.46 | | | -.63 | -.69 | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | .40 | .45 | .37 | .41 | | | | | .39 | .48 | | | | |
| 8 | | | .31 | (.25) | | | | | | | | | | |
| 9 | .31 | .41 | (.23) | .36 | | | | | | | | | | |
| 10 | .44 | .51 | .38 | .48 | | | | | .42 | .41 | | | | |
| 11 | | | -.40 | -.39 | | | -.45 | -.44 | | | | | | |
| 12 | -.52 | -.57 | | | -.51 | -.47 | | | | | | | | |
| 13 | .50 | .56 | | | .36 | .39 | | | | | | | | |
| 14 | -.55 | -.59 | | | -.52 | -.53 | | | | | | | | |
| 15 | -.49 | -.58 | | | -.46 | -.45 | | | | | | | | |
| 16 | -.52 | -.56 | | | -.40 | -.33 | | | | | | | | |
| 17 | .52 | .58 | | | .43 | .42 | | | | | | | | |
| 18 | -.39 | -.46 | | | | | | | | | -.34 | -.36 | | |
| 19 | -.43 | -.53 | (.26) | -.39 | | | | | | | (-.18) | -.31 | | |
| 20 | -.48 | -.53 | | | -.45 | -.39 | | | | | | | | |
| 21 | .47 | .49 | | | | | | | | | | | | |
| 22 | -.56 | -.57 | -.34 | -.47 | | | | | | | | | | |

NOTE: The first 17 items are items 6-24 of the 1976 PES and the last 22 are the bipolar items.

were the same as those comprising those factors when only the 1976 PES items were factor analyzed. However, two of the items loading on the PES scale, Curricular Offerings, were associated with Instruction, whereas two did not load on any factor when the analysis included the optional items. The factor, Curricular Offerings, was the fourth extracted and had the lowest internal consistency, whereas the factor, Instruction, included items that measure both quality of instruction and the structure of the department, two related aspects.

The final hierarchical solution indicates that the PES items reflect both Departmental Challenge and Support. The PES items comprising the two factors, Personal Value (Items 6, 23, and 24 of the 1976 PES) and Satisfaction with Instruction (Items 9, 10, 11, and 12) are associated with both Departmental Support and Challenge, whereas the items measuring "Satisfaction with Mentorship" are associated only with Support. Based on Analysis III, the PES measures dimensions of the department that reflect the supportive, facilitative role of the departmental faculty and the challenging, confronting role of the department through its faculty, standards, and requirements.

## Discriminant Validity

The functions of the PES are to provide information that can be used to make comparisons among departments and to identify weaknesses and strengths within departments. These two functions refer to the discriminant validity of the PES. Valid comparisons among departments require that the PES scales discriminate among departments, i.e., average PES scale scores should differ across departments. Thus, one question that guided the analyses concerning discriminant validity was: How much of the variability of student responses (undergraduate and graduate) is

attributed to departmental differences? If interdepartmental differences exist, do those differences reflect characteristics of academic programs that can be meaningfully interpreted?

Valid intradepartment differentiations on the PES scales refer to the diagnostic value of the PES scales. Do students within a department respond differently to the PES scales so that the scales can be used to identify departmental strengths and weaknesses on the dimensions measured by the PES? Is the profile of student responses on the PES scales sufficiently variable to indicate any strengths or weaknesses within a department?

The PES scales defined by the first order factors extracted in the factor analyses of the 1975 PES data were used to determine their potential usefulness for both interdepartmental and intradepartmental comparisons. The three PES scales used in the analyses were Personal Value, Satisfaction with Instruction, and Satisfaction with Mentorship. (See Table 3.3 for the items which are included in each PES scale.) The analyses involved several steps. The average PES scale score for every department calculated separately for undergraduates and graduates was obtained. Next the reliability of the PES scale departmental means was calculated using the Horst Reliability coefficient (1949). The Horst reliabilities, given in Table 3.10 were sufficiently high for the next step. These coefficients were then used to place 95% confidence intervals around the means of each scale for each department. The distribution of scale scores for all students across all departments, calculated separately for undergraduates and graduates, was used as the reference distribution. The confidence intervals of each scale were then placed on the reference distribution separately for undergraduates and graduates using the overall mean and

Table 3.10

Horst Reliabilities for 1975 PES Scales

| Scales | Undergraduates | Graduates |
|---|---|---|
| Mentorship | .90 | .79 |
| Value | .83 | .68 |
| Instruction | .86 | .66 |

standard deviation of these distributions. Confidence intervals of each scale for each department were plotted against these reference distributions as shown in Figure 3.1 for undergraduates and Figure 3.2 for graduates. In the figures the symbol, $\bar{X}..$, indicates the mean for each scale for all undergraduates (or graduates) across all departments, and SD represents the standard deviation. Consequently Figures 3.1 and 3.2 depict departmental comparisons graphically with respect to the reference distributions. For ease of interpretation, departments were ranked according to their positions on each distribution. The rank orderings of the departmental means are not necessarily identical on each scale.

Does a "sufficient" number of discriminations among departments occur for each subscale? If the degree of overlap of a confidence interval of one department with any other department is used as the criterion, Figures 3.1 and 3.2 show that some intervals do not overlap, especially for the scale, Mentorship. The advantage of using the student reference distribution as a common standard is the ability to examine the degree of overlap

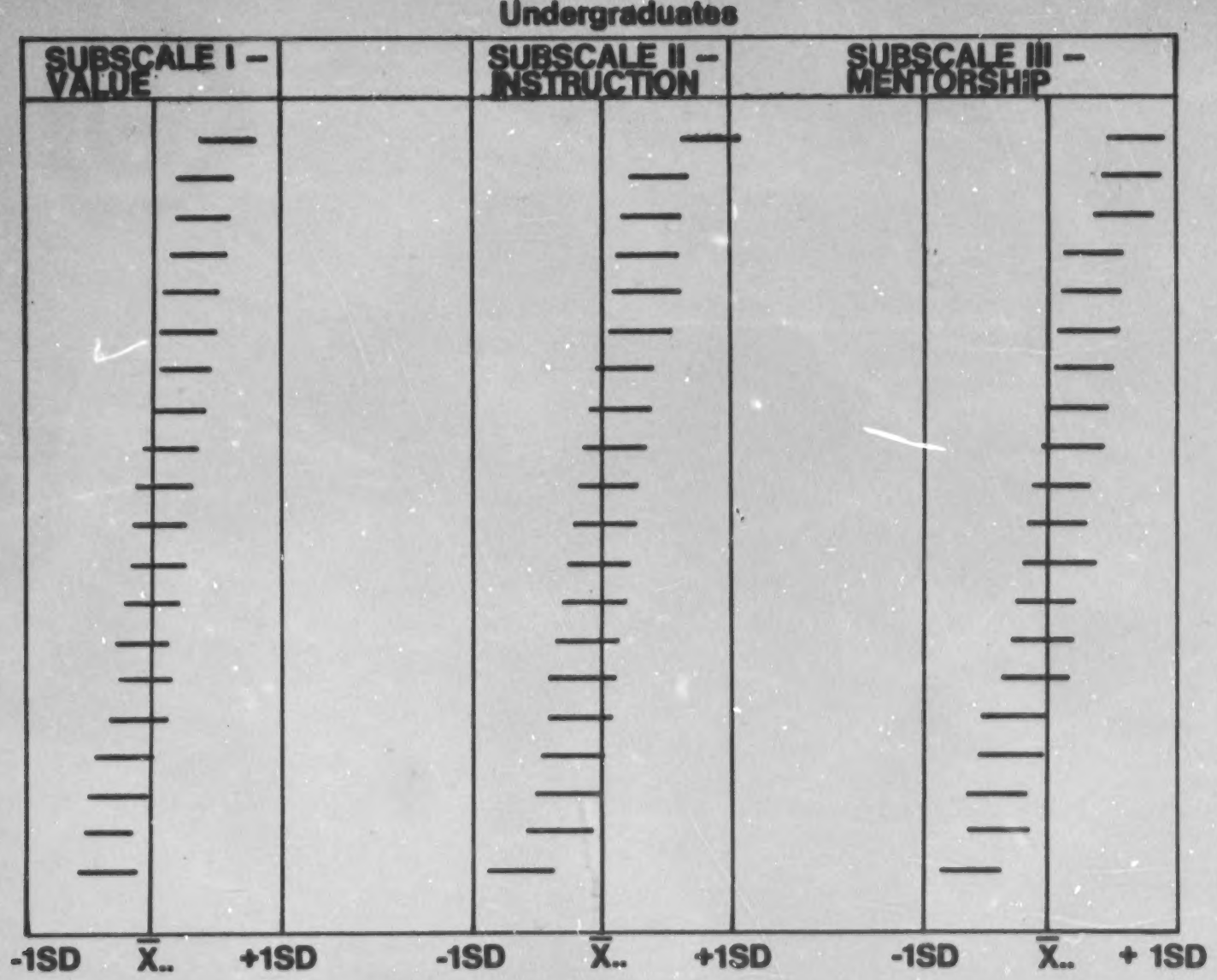




Figure 3.1: 95% Confidence Intervals for 1975 Undergraduate Department Means

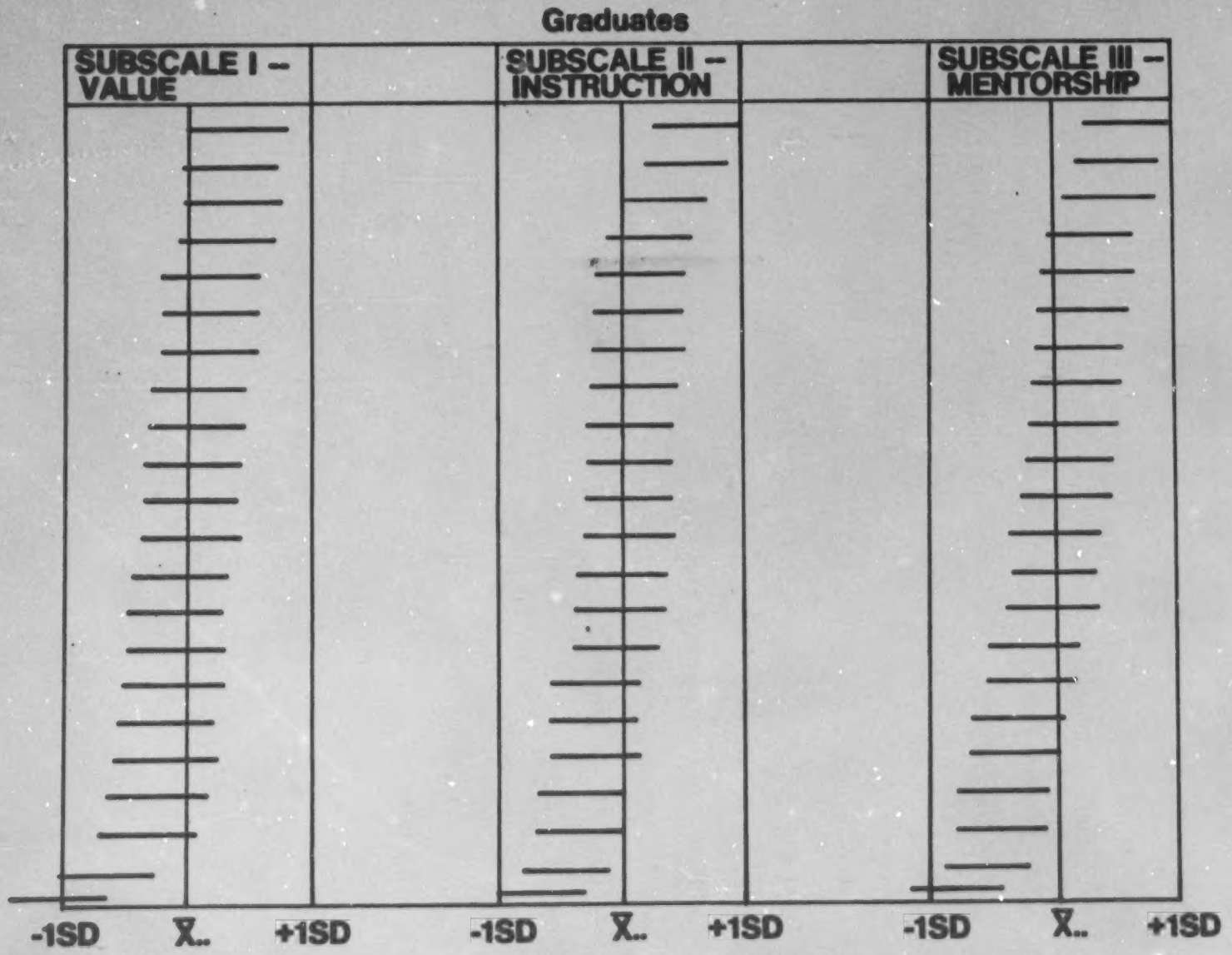


Figure 3.2: 95% Confidence Intervals for 1975 Graduate Department Means

of a confidence interval for any department with the average student response across all departments ($\bar{X}..$) and also with respect to the variability of this distribution. According to this criterion, the end points of several confidence intervals depicted in the figures do not overlap the overall mean.

To assess the diagnostic value of the PES, i.e., its ability to reliably detect intradepartmental strengths and weaknesses, the confidence intervals for the three scales were compared for each of several departments. Although the scales are measuring somewhat unique dimensions of an academic program, the PES must still be evaluated on the extent to which a department may have sufficiently different mean scale values to infer relative strengths and weaknesses for that department; otherwise only interdepartmental comparisons would be possible.

Figure 3.3 depicts the scale profiles for each of seven undergraduate and two graduate departments in which at least one scale mean was significantly different from another. In these cases, departmental strengths and weaknesses can easily be inferred. These results provide some support for the diagnostic power of the PES. The lack of greater discriminitory power between PES scales is due to the general second order factor, Overall Satisfaction, which is reflected in each scale. Furthermore, assessing the degree of overlap among 95% confidence intervals, whether inter- or intra-departmental comparisons are considered, represents a stringent criterion. If a 68% confidence interval were used instead, then the number of nonoverlapping intervals would be increased considerably, and consequently, the diagnostic capabilities of the PES scales would be more impressive.

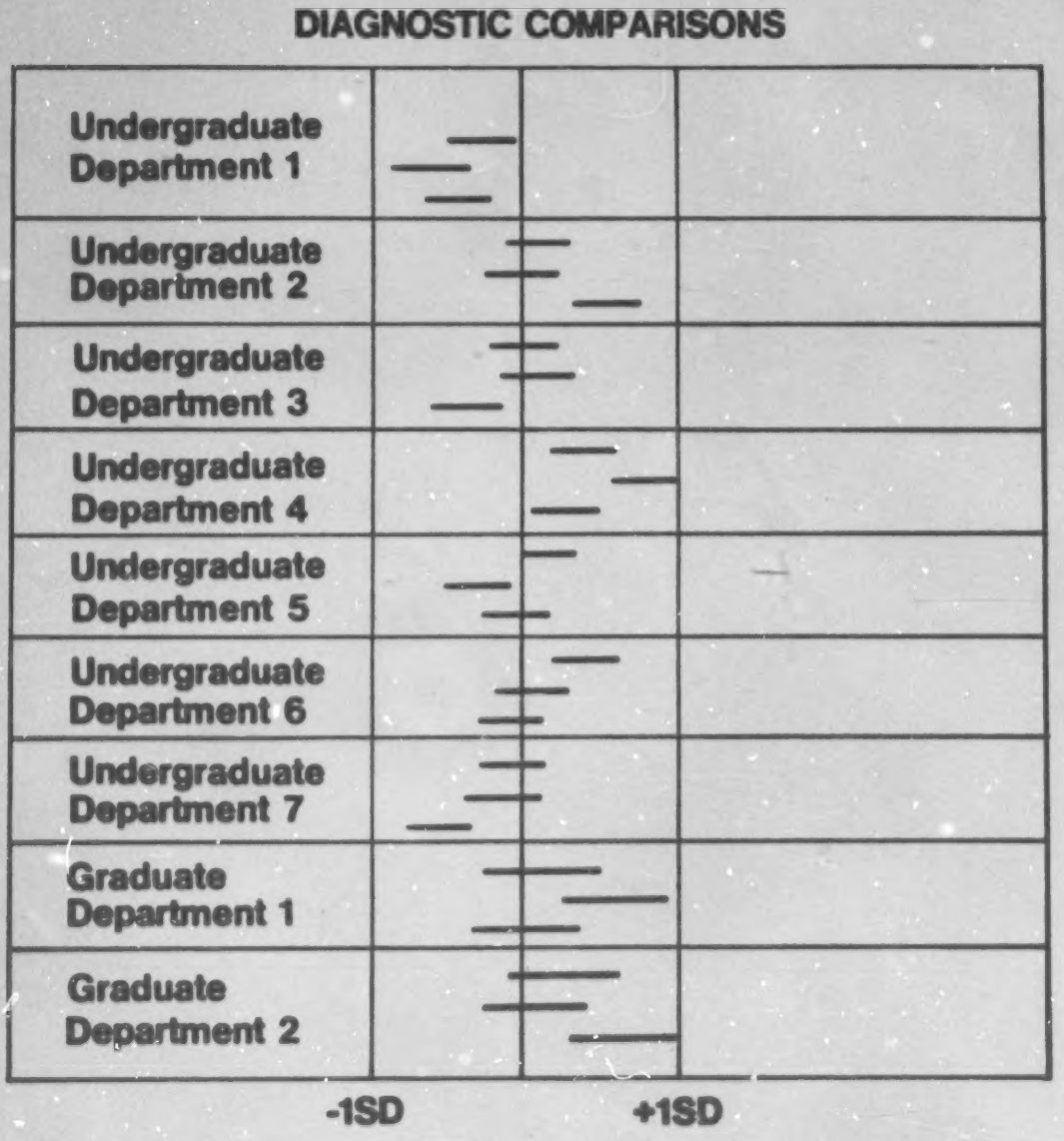


Figure 3.3: Diagnostic Comparisons of Subscales for 1975 PES

In sum, there is tentative support for the validity of PES data as a means of identifying program strengths and weaknesses. The analyses indicate that the PES does discriminate among academic departments on the basis of students' satisfaction ratings. The reliability of mean scale scores was quite high for undergraduate programs, permitting frequent between-department discriminations to be made with a high level of confidence. Fewer discriminations were possible for graduate programs, due to lower reliability estimates for department scale means. Reliability estimates such as the Horst coefficient are greatly affected by the number of students surveyed in each department. Since graduate programs were generally smaller than undergraduate programs, reliabilities of means were substantially lower in the graduate sample. Consequently the PES may be more useful for making comparisons among departments with fairly large enrollments.

## Criterion-Related Validity

The Criterion-Related Validity of the PES refers to the degree of relationship between student satisfaction as measured by the PES scales and other measurable characteristics of the department which may be indicators of departmental quality. The questions asked were: Do the PES scales correlate significantly with characteristics of a department and its faculty as measured from other sources? In what ways are student satisfaction related to the organizational and structural characteristics of a department or with demographic characteristics and professional achievement of the departmental faculty?

In the COPE review, the faculty complete a biographical information form on which they report their education, scholarly achievements in a

number of categories, committee assignments, etc. They also complete a Department Head Evaluation Form and three items measuring morale. Departmental characteristics, such as number of faculty tenured and average age are collected from records on file. Table 3.11 presents the faculty and departmental characteristics included in this validity study and the definition of each.

The faculty characteristics, number of teaching awards over lifetime (7), and the number of six types of scholarly publications over lifetime (12-17) were also translated into annual rates to adjust for differences among the years of experience of the faculty in the departments. While a lifetime record represents a better index of overall scholarly reputation and the annual rate represents a better index of recent research activity of the faculty, similar relationships between student ratings and the two different types of publication records were obtained. The correlations of all faculty characteristics with each of the four PES scales are presented in Table 3.12. The correlations are based on departmental averages, i.e., the unit of analysis is the department mean for each faculty characteristic and each PES scale. Consequently, the correlations are based on sample sizes of 24, the number of undergraduate and graduate departments included in the analyses.

Based on the correlations between each faculty characteristic with the four scales, the following generalizations seem reasonable. Both graduate and undergraduate satisfaction with their department is related to committee membership. Departments whose faculty with relatively high membership on college committees but relatively low membership on university committees receive higher student satisfaction ratings than departments with faculty with the opposite committee membership.

Table 3.11

Faculty Characteristics Correlated with the 1976 PES Scales

| Characteristic | Definition |
|---|---|
| 1. Faculty morale on campus | Rating on a 5-point scale, from Low to High to item "What is your estimate of faculty morale on campus?" |
| 2. Morale in department | Rating on a 5-point scale, from Low to High to item "What would you rate morale in your department compared to that on campus?" |
| 3. Professor's morale | Rating on a 5-point scale, from Low to High to item "How is your morale?" |
| 4. Average age | Average age of faculty with professorial rank in each department, 1976-77. |
| 5. Percent of full professors | Percent of full professors in each department, 1976-77. |
| 6. Percent tenured | Percent of faculty with professional rank with tenure, 1976-77. |
| 7. Teaching awards | Number of awards reported by faculty during their entire professional career. |
| 8. Professional experience | Number of years reported on faculty self report. |
| 9. College committees | Number of memberships on college committees during last 3 years. |
| 10. Campus committees | Number of memberships on campus committees during last 3 years. |
| 11. University committees | Number of memberships on university committees during last 3 years. |
| 12. Journal articles | Number obtained from list of lifetime publications included in self report. |
| 13. Books and monographs | (Same as above) |
| 14. Concerts and exhibits | (Same as above) |
| 15. Reviews | (Same as above) |
| 16. Technical reports | (Same as above) |
| 17. Other publications | (Same as above) |

Table 3.12

Correlations Between Faculty Characteristics and

1976 PES Scales for Undergraduates and Graduates

| | PES Scales | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mentorship | | Value | | Instruction | | Curriculum | |
| | UG | G | UG | G | UG | G | UG | G |
| 1. Campus morale | -11 | -13 | -20 | -05 | -06 | -06 | -05 | 17 |
| 2. Department morale | -20 | -01 | -23 | 15 | -30 | 07 | -20 | 40 |
| 3. Professor's morale | -19 | -08 | -41 | 02 | -17 | -04 | -39 | 17 |
| 4. Average Age | -37 | 25 | -24 | 26 | -53 | 34 | -20 | 43 |
| 5. Percent Full Professors | -39 | 09 | -52 | 38 | -60 | 14 | -17 | 43 |
| 6. Percent Tenured Professors | 08 | 04 | 06 | -02 | -10 | -14 | 13 | -18 |
| 7. Teaching awards | -01 | 04 | -28 | 17 | -21 | 20 | 20 | 02 |
| 8. Professional experience | 05 | 36 | -07 | 28 | 12 | 33 | 05 | 00 |
| 9. College committees | 53 | 68 | 15 | 42 | 39 | 43 | 25 | -01 |
| 10. Campus committees | 19 | 30 | 12 | 12 | 11 | 13 | 28 | -30 |
| 11. University committees | -27 | -26 | -42 | -17 | -25 | -05 | -03 | -12 |
| 12. Journal articles | -13 | 20 | -09 | -15 | 15 | 05 | -23 | 07 |
| 13. Books and monographs | -10 | 02 | -37 | 24 | -36 | 03 | -10 | -04 |
| 14. Concerts and exhibits | 08 | -03 | 21 | 04 | 02 | 31 | 13 | 19 |
| 15. Reviews | -29 | -33 | -30 | -17 | -06 | -13 | -08 | -14 |
| 16. Technical reports | 19 | 32 | 14 | 02 | -03 | 15 | 19 | 09 |
| 17. Other publications | 49 | 39 | 01 | 21 | 21 | 29 | 24 | 41 |

Notes: Decimal points have been omitted. A correlation of .40 or above is significant at the .05 level of significance.

Table 3.12 (continued)

Correlations Between Faculty Characteristics and

1976 PES Scales for Undergraduates and Graduates

| | PES Scales | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Mentorship | | Value | | Instruction | | Curriculum | |
| | UG | G | UG | G | UG | G | UG | G |
| 18. Annual rate of teaching awards | -10 | -05 | -33 | 09 | -31 | 13 | 17 | 04 |
| 19. Annual rate of journal articles | -09 | 09 | 01 | -30 | 15 | -10 | -21 | 05 |
| 20. Annual rate of books and monographs | -15 | -08 | -34 | 17 | -40 | -06 | -13 | -02 |
| 21. Annual rate of concert and exhibits | 08 | -03 | 21 | 04 | 02 | 31 | 14 | 19 |
| 22. Annual rate of reviews | -27 | -41 | -29 | -22 | -06 | -18 | -05 | -14 |
| 23. Annual rate of technical reports | 20 | 33 | 15 | 00 | -05 | 15 | 21 | 14 |
| 24. Annual rate of other publications | 45 | 34 | 09 | 10 | 18 | 23 | 22 | 41 |

Notes: Decimal points have been omitted. A correlation of .40 or above is significant at the .05 level of significance.

However, undergraduate and graduate satisfaction is not always correlated in similar ways with other faculty characteristics. Based on the correlations of average age and percent of full professors with student satisfaction, undergraduates tend to be less satisfied with their faculty as mentors and with their instruction when the departmental faculty include the highest proportion of older and full professors, whereas graduate majors are more satisfied with their faculty when the department includes a relatively large number of senior faculty. Faculty morale is not related to graduate student satisfaction with their department, but slightly negatively related to undergraduate student satisfaction.

Faculty publications of the traditional academic type are not related to student satisfaction with their departments, but "other publications" are positively related to satisfaction. This category, which includes articles in the popular press and trade journals, may indicate the extent of faculty interest in areas other than their discipline and a desire to interpret one's professional work to a larger audience.

Although the analyses do not provide answers to why students are satisfied with areas of a department, they may likely be basing their satisfaction on the interpersonal relationships available to them. Their satisfaction with the faculty is unrelated to faculty morale, which may indicate that the faculty receive their reward from scholarly pursuits and not from the social interaction with students, especially with under graduates. Departments with younger faculty and faculty at lower ranks, faculty who are more involved in college committees, may be those departments in which teaching receives considerable attention and interest.

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Appendix A

SIDE ONE

# PROGRAM EVALUATION SURVEY

**SECTION I**

SPECIAL CODE: A B C D E

SEX: Male ○ Female ○

STATUS: Fresh ○ Soph ○ Junior ○ Senior ○ Masters ○ Doctoral ○ Other ○

NUMBER OF COMPLETE SEMESTERS OF CAMPUS IN CURRENT MAJOR: 0 - 1 ○ 2 - 3 ○ 4 - 5 ○ 6 Plus ○

CUMULATIVE GPA: 4.71 or Above ○ 4.21 - 4.7 ○ 3.71 - 4.2 ○ 3.7 or Below ○

OFFICE USE ONLY

**GENERAL DIRECTIONS:** This "Program Evaluation Survey" was designed to elicit your opinions about the program of studies you are currently pursuing (i.e., your major). When you are answering the items please consider your reaction toward your major and your department as a whole and not specifically toward any one course or instructor. This survey is one facet of an overall departmental evaluation.

**USE PENCIL ONLY!**

**GRADS ONLY**

FROM WHERE DID YOU OBTAIN YOUR UNDERGRADUATE DEGREE?

My present department ..... ○
Another department on this campus ..... ○
Same or similar dept. on another campus . ○
A different dept. on another campus ..... ○

**UNDERGRADS ONLY**

A. TRANSFER STATUS
- ○ Not a transfer student
- ○ Transfer from a four-year institution
- ○ Transfer from a community college

B. PRIMARY REASON FOR CHOOSING MAJOR
- ○ Preparation for grad or professional school
- ○ Preparation for immediate entry into a vocation
- ○ Hobbies, but was interested in subject
- ○ Other

**SECTION II**

**DIRECTIONS:** For each of the items below indicate your opinion of your major or your department by marking the point on the scale which most nearly expresses your opinion. The middle point on the scale indicates an opinion of "About Right".

| | | |
|---|---|---|
| 1. The level of difficulty of your major program. | TOO EASY ○○○○○ | TOO DIFFICULT |
| 2. The amount of structure in your academic program (curriculum). | TOO FLEXIBLE ○○○○○ | TOO RIGID |
| 3. The departmental admissions standards. | TOO HIGH ○○○○○ | TOO LOW |
| 4. The orientation of the majority of your course work. | TOO GENERAL ○○○○○ | TOO DETAILED |
| 5. Indicate your perception of the balance between departmental attention to undergraduate and graduate programs. | UNDER-GRADUATE EMPHASIS ○○○○○ | GRADUATE EMPHASIS |
| 6. Some students are more absorbed in, and enthusiastic about their majors than others. Describe your attitude toward your major program. | HIGH-FERVENCE ○○○○○ | MEDICA-TION |

(DO NOT CONSIDER "ABOUT RIGHT" POSITION WHEN ANSWERING THIS QUESTION)

**SECTION III**

**DIRECTIONS:** For the following items, rate your level of satisfaction with your major or your department by marking one point which most nearly expresses your attitude. (NA indicates Not Applicable and DK indicates Don't Know)

| | SATISFACTION | |
|---|---|---|
| 7. The extent to which you are challenged by your program of study. | LOW ○○○○○ | HIGH |
| 8. The extent to which your major program provides a well-integrated set of courses. | LOW ○○○○○ | HIGH |

CONTINUE SECTION III IN NEXT COLUMN

**SECTION III (Continued)**

| | SATISFACTION | |
|---|---|---|
| 9. The overall quality of instruction in your major department. | LOW ○○○○○ | HIGH |
| 10. The extent to which a sound theoretical framework is developed in your major program | LOW ○○○○○ | HIGH |
| 11. On the average, the quality of texts and other instructional materials used by instructors in your department. | LOW ○○○○○ | HIGH |
| 12. Classroom evaluation procedures (graded tests, papers - -) | LOW ○○○○○ | HIGH |
| 13. The availability of enrichment activities offered in addition to regular classes. (Seminars, colloquia, social events, etc.) | LOW ○○○○○ | HIGH |
| 14. The variety of course offerings | LOW ○○○○○ | HIGH |
| 15. Departmental attention to providing students with credentials for obtaining employment after graduation. | LOW ○○○○○ | HIGH |
| 16. Academic contact with faculty outside the classroom. | LOW ○○○○○ | HIGH |
| 17. The quality of academic advising. | LOW ○○○○○ | HIGH |
| 18. The quality of vocational guidance. | LOW ○○○○○ | HIGH |
| 19. The channels of communications between faculty and students regarding student needs, concerns and suggestions. | LOW ○○○○○ | HIGH |
| 20. The departmental support staff (secretarial, clerical, etc.) who deal directly with students. | LOW ○○○○○ | HIGH |
| 21. Size of lower level (100 - 200) classes. | LOW ○○○○○ | HIGH |
| 22. Size of upper level (300 - 400) classes. | LOW ○○○○○ | HIGH |
| 23. The extent to which you regard your program of study as worthwhile. | LOW ○○○○○ | HIGH |
| 24. Overall satisfaction with your major program. | LOW ○○○○○ | HIGH |

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PLEASE CONTINUE ON REVERSE SIDE

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SIDE 2

**SECTION V PLEASE COMPLETE THE FOLLOWING OPEN-ENDED QUESTIONS**
**PLEASE KEEP RESPONSES WITHIN THE BOXES PROVIDED**

| 1. What are the major strengths of your major department? | 2. What are the major weaknesses? |
|---|---|
| | |

| 3. How has the department acted to adopt the suggestions which you had given last semester? | 4. What changes, if any, would you suggest in courses and/or curriculum? |
|---|---|
| | |

**SECTION IV**
**OPTIONAL ITEMS**

**PLEASE RESPOND TO OPTIONAL ITEMS IN THE SPACE BELOW IF SUCH ITEMS ARE USED.**

| | | | |
|---|---|---|---|
| 1 | A B C D E | 22 | A B C D E |
| 2 | A B C D E | 23 | A B C D E |
| 3 | A B C D E | 24 | A B C D E |
| 4 | A B C D E | 25 | A B C D E |
| 5 | A B C D E | 26 | A B C D E |
| 6 | A B C D E | 27 | A B C D E |
| 7 | A B C D E | 28 | A B C D E |
| 8 | A B C D E | 29 | A B C D E |
| 9 | A B C D E | 30 | A B C D E |
| 10 | A B C D E | 31 | A B C D E |
| 11 | A B C D E | 32 | A B C D E |
| 12 | A B C D E | | |
| 13 | A B C D E | | |
| 14 | A B C D E | | |
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| 16 | A B C D E | | |
| 17 | A B C D E | | |
| 18 | A B C D E | | |
| 19 | A B C D E | | |
| 20 | A B C D E | | |
| 21 | A B C D E | | |

ID CODE

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7 7 7 7 7 7 7 7 7
8 8 8 8 8 8 8 8 8
9 9 9 9 9 9 9 9 9

**DO NOT WRITE IN SHADED AREA**

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# PROGRAM EVALUATION SURVEY Appendix B SIDE ONE

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**GENERAL DIRECTIONS:** This "PROGRAM EVALUATION SURVEY" was designed to elicit your opinions about the program of studies you are currently pursuing (i.e., your major). When you are answering the items please consider your reactions toward your major and your department as a whole and not specifically toward any one course or instructor. This survey is one facet of an overall departmental evaluation.

**USE PENCIL PLEASE**

**SECTION I**

DEPT. CODE

STATUS: FRESH, SOPH, JUNIOR, SENIOR, MASTERS, DOCTORAL, OTHER

SEX: MALE, FEMALE

HOW MANY COMPLETE SEMESTERS HAVE YOU BEEN A STUDENT AT THIS CAMPUS IN YOUR CURRENT MAJOR? 0-1, 2-3, 4-5, 6 PLUS

RECORD YOUR CUMULATIVE GPA: 4.6 OR ABOVE, 3.61-4.59, 3.6 OR BELOW

UNDERGRADS ONLY

A. TRANSFER STATUS: NOT A TRANSFER STUDENT; TRANSFER FROM A FOUR-YEAR INSTITUTION; TRANSFER FROM A COMMUNITY COLLEGE

B. MY PRIMARY REASON FOR CHOOSING THIS MAJOR WAS: PREPARATION FOR GRAD OR PROFESSIONAL SCHOOL; FOR IMMEDIATE ENTRY INTO A VOCATION; NEITHER, I PLAN TO CHANGE MAJORS; OTHER

GRADS ONLY

FROM WHERE DID YOU OBTAIN YOUR UNDERGRADUATE DEGREE? MY PRESENT DEPT.; ANOTHER DEPT. ON THIS CAMPUS; SAME OR SIMILAR DEPT. ON ANOTHER CAMPUS; A DIFFERENT DEPT. ON ANOTHER CAMPUS

**SECTION II**

DIRECTIONS: For each of the items below indicate your opinion of your major or your department by marking the point on the scale which most nearly expresses your opinion--the middle point on the scale indicates an opinion of "about right".

| | | | |
|---|---|---|---|
| 1. The level of difficulty of your major program. | TOO EASY | ABOUT RIGHT | TOO DIFFICULT |
| 2. The amount of structure in your academic program (curriculum). | TOO FLEXIBLE | | TOO RIGID |
| 3. The availability of enrichment activities offered in addition to regular classes. (Seminars, Colloquia, Social Events, etc.). | TOO MANY | | TOO FEW |
| 4. The variety of course offerings. | TOO MANY | | TOO FEW |
| 5. The departmental admissions standards. | TOO HIGH | | TOO LOW |
| 6. The orientation of the majority of your course work. | TOO PRACTICAL | | TOO THEORETICAL |

The degree of emphasis which your department places on each of the following. (DK indicates Don't Know).

| | | | | |
|---|---|---|---|---|
| 7. Preparing undergraduates who want to go into graduate school or professional school. | TOO GREAT | | TOO LITTLE | DK |
| 8. Graduate education. | TOO GREAT | | TOO LITTLE | DK |
| 9. Providing students with credentials for obtaining employment after graduation. | TOO GREAT | | TOO LITTLE | DK |
| 10. Some students are more absorbed in, and enthusiastic about their majors than others. Describe your attitude toward your major program. | INDIFFERENCE | | | DEDICATION |

**SECTION III**

DIRECTIONS: For the following items, rate your level of satisfaction with your major or department by marking one point which most nearly expresses your attitude:

| | SATISFACTION | | |
|---|---|---|---|
| 11. The extent to which you are challenged by your program of study. | HIGH | | LOW |
| 12. The extent to which your major program provides a well integrated set of courses. | HIGH | | LOW |
| 13. The overall quality of instruction in your major department. | HIGH | | LOW |
| 14. On the average, the quality of texts and other instructional materials used by instructors in your department. | HIGH | | LOW |
| 15. Classroom evaluation procedures (Graded tests, papers, etc.). | HIGH | | LOW |
| 16. The accessability of instructors for conferences outside of class. | HIGH | | LOW |
| 17. The quality of academic guidance. | HIGH | | LOW |
| 18. The quality of vocational guidance. | HIGH | | LOW |
| 19. The channels of communications between faculty and students regarding student needs, concerns, and suggestions. | HIGH | | LOW |
| 20. The departmental support staff (Secretarial, Clerical, etc.) who deal directly with students. | HIGH | | LOW |
| 21. Size of lower level (100-200) classes. | HIGH | | LOW |
| 22. Size of upper level (300-400) classes. | HIGH | | LOW |
| 23. The extent to which you regard your program of study as worthwhile. | HIGH | | LOW |
| 24. Overall satisfaction with your major program. | HIGH | | LOW |



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**SECTION IV**

DIRECTIONS: If your department could receive a greater percentage of the University's resources for any of the following reasons, which three of these should receive top priority? Please number your three choices in order of importance.

| | | | | | |
|---|---|---|---|---|---|
| 25 | 1 2 3 | Provide more instructional equipment and material. | 30 | 1 2 3 | Provide more financial support for graduate students. |
| 26 | 1 2 3 | Support instructional development activities to foster better teaching. | 31 | 1 2 3 | Provide more support for faculty research. |
| 27 | 1 2 3 | Provide incentives for good teaching. | 32 | 1 2 3 | Provide more support for student research. |
| 28 | 1 2 3 | Expand graduate curriculum. | 33 | 1 2 3 | Other (specify)_____ |
| 29 | 1 2 3 | Expand undergraduate curriculum. | | | _____ |

**SECTION V OPTIONAL ITEM SECTION**

1 A B C D E 2 A B C D E 3 A B C D E 4 A B C D E 5 A B C D E 6 A B C D E 7 A B C D E 8 A B C D E

9 A B C D E 10 A B C D E 11 A B C D E 12 A B C D E 13 A B C D E 14 A B C D E 15 A B C D E 16 A B C D E

17 A B C D E 18 A B C D E 19 A B C D E 20 A B C D E 21 A B C D E 22 A B C D E 23 A B C D E 24 A B C D E

**PLEASE COMPLETE THE FOLLOWING OPEN-ENDED QUESTIONS.**

1. What are the major strengths of your major department?

2. What are the major weaknesses?

3. How has the department failed to meet the expectations which you had when you entered?

4. What changes would you suggest in courses and/or curriculum?



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Appendix C

1976 PES Optional Items

The purpose of this study is to help the Measurement and Research Division develop better measures for assessing academic programs. You are asked to describe concepts such as "Your current program of study" and "The faculty in your department" using the scales provided. Please mark your responses on Side 2 of the PES in the box labeled "Section IV Optional Items". Make sure that item numbers on questionnaires and answer sheet correspond.

If you feel an adjective on the end of the scale applies to the concept being described, you should mark the answer sheet as follows:

| | | | | | | |
|---|---|---|---|---|---|---|
| Active | ● | B | C | D | E | Passive |
| | | | or | | | |
| Active | A | B | C | D | ● | Passive |

If you feel one adjective is somewhat related to the concept, mark the answer sheet as follows:

| | | | | | | |
|---|---|---|---|---|---|---|
| Humorous | A | B | C | ● | E | Serious |
| | | | or | | | |
| Humorous | A | ● | C | D | E | Serious |

If the scale is irrelevant to the concept, or if you consider the concept to be equally associated with both adjectives, mark the middle space.

| | | | | | | |
|---|---|---|---|---|---|---|
| Positive | A | B | ● | D | E | Negative |

The value of this study depends entirely on your accurate and honest responses. Your cooperation is appreciated. REMEMBER: RESPOND ON SIDE 2 OF PES ANSWER SHEET, NOT THIS FORM!

I. Using the following scales, describe the Program of Study you are Currently Pursuing in Your Major Department.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. | Interesting | A | B | C | D | E | Boring |
| 2. | Unchallenging | A | B | C | D | E | Challenging |
| 3. | Complex | A | B | C | D | E | Simple |
| 4. | Theoretical | A | B | C | D | E | Practical |
| 5. | Difficult | A | B | C | D | E | Easy |
| 6. | Unstructured | A | B | C | D | E | Structured |
| 7. | Useless | A | B | C | D | E | Useful |
| 8. | General | A | B | C | D | E | Detailed |
| 9. | Unintegrated | A | B | C | D | E | Integrated |
| 10. | Worthless | A | B | C | D | E | Valuable |

Appendix C (Continued)

1976 PES Optional Items

II. The Faculty in Your Department seem to be:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 11. | Demanding | A | B | C | D | E | Undemanding |
| 12. | Friendly | A | B | C | D | E | Unfriendly |
| 13. | Unfair | A | B | C | D | E | Fair |
| 14. | Approachable | A | B | C | D | E | Aloof |
| 15. | Available | A | B | C | D | E | Unavailable |
| 16. | Enthusiastic | A | B | C | D | E | Bored |
| 17. | Insensitive | A | B | C | D | E | Sensitive |
| 18. | Organized | A | B | C | D | E | Disorganized |
| 19. | Strong | A | B | C | D | E | Weak |
| 20. | Patient | A | B | C | D | E | Impatient |
| 21. | Vague | A | B | C | D | E | Precise |

III. Using the following scale, evaluate your Major Department:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 22. | Excellent | A | B | C | D | E | Poor |